In order to better understand and share the process of installing a renewable energy project, the IN-ACRE team traveled to three Indiana farms that have successfully implemented renewable energy projects. We toured the sites, learned about the technical specifications, and spoke with each farmer-landowner about how they take advantage of all the benefits renewables have to offer. On our visit we learned about:

- Rick Jarrett's wind turbine project near Elwood.
- Tom McKinney's solar panel installation near Kempton.
- Richard Roach's anaerobic digester near Monticello.

Read on for these farmer profiles to see how they are making renewables work for them, and to learn more about how renewable energy projects produce energy in Indiana.

**Wind Turbines: Rick Jarret – Elwood, IN, Madison County**

![Rick Jarrett, Farmer – Elwood, IN](image)

If you have ever driven through Elwood, Indiana, you likely noticed the expansive renewable energy project. WildCat 1, developed by E.ON, consists of 125 wind turbines, 7 of
which reside on land owned by third-generation farmer, Rick Jarrett. These 125 turbines create enough energy to power 435,500 homes per year.

Rick decided to get involved in this project after being approached by E.ON land acquisition representatives for the WildCat 1 project. These project developers met with area landowners to discuss participating in the project, and Jarrett decided he wanted to learn more. Rick admits that he did quite a bit of research as he considered participating. He met multiple times with E.On's land acquisition team, visited another wind turbine project in Benton County, and finally, he went to the Madison County Court to get the building permits. Rick said of the process, “...really, it was painless, it was simple.” Rick said one of the most important parts of the project's success was relationship building. His recommendation to those interested in starting their own renewable energy projects is to “make friends with your contractors...they'll do anything for you.”

**Compensation**

In a utility-scale project such as Rick's, landowners do not invest their own money into the project. Instead, the 40-50 landowners within this project are compensated in multiple ways through a base payment, easement payment, and a yearly land rental payment. Rick recalls when asked why he decided to participate in the WildCat 1 project, “We decided for us, as a family farm, the revenue was good, and the payments are always good.” This extra stream of income has many benefits to landowners including providing regular funds to invest in crop inputs, more land, or to help manage expenses.

**Energy Generation and Distribution**

The electricity generated by the project travels through the power grid up to Northern Indiana and Michigan. On average one tower generates 1.6 MW (megawatts) of electricity per day. While turbines don't last forever, they do work for a rather long time and should generate power for up to 30 years. After that time, the owners of Wild Cat 1, along with the developer, E.ON, can decide to recommission the turbines (refurbish or update them), or the project can be torn down using funds previously set aside by the county.
Overall, Rick is pleased that he made the decision to participate in the project and takes satisfaction besides the revenue boost, “We feel we are doing our part to go green.”

To learn more about Rick Jarrett’s renewable energy experience and his wind turbines, watch IN-ACRE’s interview with him [here](#).

**Solar Panels: Tom McKinney – Kempton, IN, Tipton County**

On Tom McKinney's family farm near Kempton, Indiana, you might be surprised how he generates power to manage the family's several thousand-acre operation. Tucked away behind his barn and silo are McKinney's solar panels, a project that generates enough energy to power his farm, grain handling systems, office, house, and then some, saving him money and putting more back into his pocket. The largest factor for Tom when deciding to invest in a solar project was energy efficiency and savings. “I wanted to eliminate one of the bills, the utility bill...so solar made sense,” he shares.

Tom decided to start this project after researching solar with a friend. To finance the nearly six-figure up-front investment in the project, he opted to take advantage of renewable energy program grants to help fund it. “It's about a 17 percent return on investment to have the solar farm at this location,” he says, noting that the payback was between five and
six years but that grant programs certainly helped. “We took advantage of some programs and it has been the right decision,” Tom says.

Solar panels can be installed in various ways, so when deciding where to locate them he considered barn roofs and open ground. Ultimately, he opted to place the panels on one acre of untillable land that wasn't being used before giving purpose to a once-fallow corner of the property.

**Maintenance Isn’t Major**
Farmers are always busy so added maintenance isn’t something they take on willingly. Though he was concerned with that at first, Tom says that he experiences little to no maintenance with his solar project. The panels are tilted three times a year using a simple hand crank to increase power generation as the sun changes position with the seasons, this is the only maintenance Tom's panels require. Tom recalls a while back that a couple of his panels went out, but his contractor replaced them with no problem. “They were still under warranty so the company came and replaced them. They knew it before I did because they monitor my whole solar farm from the internet.” Tom even acknowledges that adding solar has been one of the easiest equipment investments he's made. In fact, the panels are so low maintenance Tom says: "If there's one project that I've ever done and basically walked away from and not even worried about it is that!"

**Lack of Local Opposition**
When asked about experiencing any local opposition, Tom says he had none. “I don't really understand why people are so opposed to it. If anything, it certainly helps the municipalities ...especially the schools.” He also notes the positive environmental effects that he has personally seen. “Grass grows underneath the panels so you’re going to have wildlife you wouldn't normally have in a corn or soybean field.”

**Renewable Energy is Here to Stay**
Tom is certain about the future of alternative or renewable energy, sharing that he believes we are seeing just the beginning. He encourages those wanting to get into solar to research their options and check out emerging technologies. “There isn't anybody I would not encourage to look at some solar...it just works. It just works!”
To learn more about Tom McKinney's renewable energy experience and his solar panels, watch IN-ACRE's interview with him [here](#).

**Anaerobic Digester: Richard Roach - Monticello, IN, White County**

![Richard Roach, Farmer - Monticello, IN](image)

Running 24/7 in Monticello, Indiana, is the RAKR Farms’ anaerobic digester, turning food waste and manure into electricity and fertilizer. If you're looking to understand the circular economy, look no further than the anaerobic digester process. The Roach family uses food and livestock manure to create energy and fertilizer, this energy and fertilizer are used to help power the farm and grow crops, some of those crops go to feed livestock, and finally the waste from livestock is returned to the digester and the process starts all over again. The digester produces just under 1.1 megawatts (MW) of electricity which is enough energy to power 940 homes and fertilize thousands of Indiana cropland acres. Citing reliability as one advantage of this form of clean energy, Richard Roach, farmer and member of the RAKR operation says, “Digesters are unique compared to the other renewable energy sources where you’re dependent on the sun to shine or on the wind to blow.”

**What is a Digester?**
An anaerobic digester has many components that work together to produce power. First is the digester itself. The digester does just that; it digests raw materials, like a stomach would. Organic materials like food waste and manure are broken down by bacteria in the absence of oxygen. This process produces methane gas (biogas) and digestate (leftover solids and liquid). The methane is burned by an engine which powers a generator that finally sends electricity up and out onto the energy grid. The digestate is discharged from the tank and used as a natural fertilizer for RAKR farms.

The facility takes in 30-35,000 gallons of organic product a day into a 1.2 million gallon tank, with 15 percent of that being manure. Food companies in the region pay RAKR Farms to take excess food waste and turn it into energy. It’s cheaper for these companies to bring their waste to the Roach’s facility than to pay for the space in a landfill, not to mention it is more sustainable. “We're viewing it as a value-added process, converting waste into electricity. I think that's pretty neat,” Richard says proudly.

**Deciding to Build a Digester**

The Roach family became interested in this project after learning about the benefits it offered like increased income, energy savings, and natural fertilizer production. They started researching in 2009, and the project wasn’t up and running until 2013. Richard recalls that digesters were not commonly practiced when they started to get serious about building one. “At the time, it was fairly new technology in the U.S. so finding somebody that we trusted to design and build this facility was kind of the first step.” Once they found a provider for the technology and construction, they looked into USDA grant opportunities for renewable energy, which they received to help finance the operation. Finally, they obtained the required permits and set off to build.

“Everything you see here from the buildings, to the tanks, to the concrete did not exist before. So really, the original capital investment was just starting with bare dirt and building what we have now,” he explains. Like any farm equipment there is regular maintenance involved, but Richard doesn’t feel as though the digester's maintenance is overwhelming. The costs vary year to year but include maintenance of pipes, valves, and engines. RAKR Farms saw a return on investment of their upfront costs and maintenance within 10 years, not including
the amount they save each year on fertilizer or the payments they receive for taking in food 

waste.

**Benefits**

When asked about the benefits of the digester, Richard listed three ways of looking at it: “...there is sustainability for the future...financial, and then you can look at agronomic benefits, too.” The process of turning organic waste into energy helps power RAKR farms, they receive a fixed income from the energy produced, and the digester provides fertilizer (digestate) that they would otherwise have to buy commercially.

Richard believes in the potential of this project and the viability of digesters for other locations, as well. “It can really change the way production agriculture is viewed. This process just keeps giving back, it’s a closed loop. Through the ebbs and flows of the ag economy, this has been a constant for us.”

*To learn more about Richard Roach’s renewable energy experience and his family’s anaerobic digester, watch IN-ACRE’s interview with him [here.]*