

## Living Energy Farm

### June - July 2024 Newsletter

#### How to Bring Climate Change to a Screeching Halt

Conceptually at least, stopping climate change is not a difficult task. People need to live close enough to work so they don't need a private car. If you live in a temperate climate, you need to live in a home where walls, solar space heating, and solar hot water systems are shared. It really helps to eat food that is primarily plant-based. Top that off with a DC Microgrid like we have at LEF, and you have a modern lifestyle at something like a 98% reduction in energy use compared to the average American. Sound impossible? Well, in the coming decades, we are moving toward some industrial simplification whether we like it or not. But landing an airplane is very different than crashing one, though either way brings you back to the ground.

The tools we have developed at LEF are a live demonstration of how you can live in a comfortable, energy independent home with modern conveniences. Our home is warm in winter, we take hot showers when we want, and we have ample electricity for lights and electronics. All of that is accomplished *without* grid power, nuclear, coal, natural gas, industrial "renewable" energy systems, a generator, or even much firewood.

We want to see our model grow. We want to start a movement that builds hundreds of cooperative housing projects and ecovillages powered by DC Microgrids. Imagine you live in one of these ecovillages. Your home looks much like a typical condo or apartment building, with thick walls that surround several units, big windows on the south and shade trees on the east and west, and solar collectors (both thermal and electric) on the roof. There are gardens and orchards south of the buildings. There's no grid connection or propane tanks on site. Instead of paying electric and gas bills, residents pay a modest monthly fee to support a caretaker. That caretaker keeps the biogas digester fed, waters the batteries, and pops your dinner in the solar cookers before you come home from work. Then you get to enjoy your dinner in the company of the other people who live there, or in the privacy of your own unit. Over time, the residents become a community of people who know and support each other. If you get tired of it, you sell your unit and move on.

We need an alternative to the mass "electrification" plan that has turned into a mass deforestation program. Here in Louisa County VA, the local board has "limited" the solar deforestation of the county to "only" 3%. Taking down tens of thousands of acres of hardwood forests and paving them over to put up solar panels in the name of stopping climate change is very, very wrong, and has only a marginal impact (if any) on actually reducing fossil fuel use. We cannot hope to address the climate crisis with these supply-focused solutions alone, we need a demand-side solution that reduces energy consumption to the levels required by our ecological emergency.

**WE NEED YOU.** Living Energy Farm is a small organization. We are farmers, parents and teachers, we are wizards of pipes, wires and things that whirrr, but we have not had the resources to promote our ideas all that much. Starting this fall we would like to do speaking events, to talk to people about ecological living at 2% of current resource use. We need you to help us get out (or connect online) with more people. So please help us set up events. Talk your friends, your church, or some strangers. Tell them we are for real. Find us a venue, or help us set up online meetings.

The goal is to help small groups of people in create entities that can build or retrofit cooperative homes using DC Microgrids. Where we are going could be a good place, but bringing people together to make that happen is going to be a challenge. We look forward to hearing from you.

#### DC Solar Training at LEF

In July, we hosted a four day DC Solar Training at LEF. We had a dozen focused, motivated people representing many exciting projects in Virginia, North Carolina, West Virginia, and Pennsylvania. It certainly helped that the weather was perfect for the training. But that said, the

infrastructure at LEF did not hiccup at all with a dozen extra people here. Everyone was fed. Everyone took showers and charged their devices at will. This training was focused, a bit shorter than prior trainings, but the group was very technically inclined and picked things up quickly. They were very enthusiastic about taking on challenging electrical projects, like converting appliances and building charging stations. After a few days of workshops, the group went over to Little Flower Catholic Worker (a small community 8 miles from LEF) to work on upgrading their DC Microgrid. We installed a 55AH 12V battery kit, and extended their 90V direct drive electrical supply into their kitchen so they could use the power for cooking (previously they were only using it to run their well pump).

Instead of asking people to pay for the event, we asked them to commit to helping with a socially worthwhile project. We discussed various projects and will look forward to seeing how that unfolds.



*DC Appliance Conversion Workshop*

## **Biogas**

In the last newsletter, we were excited about our cheap air mattress biogas storage system. It seemed like a good idea, until they all started leaking. Darn. Biogas bags for sale in the U.S. are very expensive. We found a Chinese company that sold us a couple of quite large, very cheap biogas bags (Shenzhen Teenwin Environment Co., Ltd). As we head to print, we are plumbing those up and putting up a shed to house one large bag. Meanwhile, we have gotten some practice keeping Seymour (the biogas digester) under control. It's fairly easy to push production up or down. If we cut off food and heat, biogas production tapers down over the course of a couple weeks. Turn on the heat and feed it, and it only takes a few days for biogas production to climb noticeably. We are pleased to realize how easy it is to produce more or less gas as we need it. We remain convinced that biogas, solar thermal, and solar direct drive photovoltaic power are the most accessible energy sources available for our sustainable future.

## **Horse Progress Days -- Hanging Out with the Amish**

The largest Amish gathering in the USA is an event called Horse Progress Days. The event focuses on horse drawn farming equipment, and there are many demonstrations of farm equipment. But the event is huge -- well over 50,000 people in one very large field with massive tents, hundreds of vendors, and quite a festive atmosphere. The Amish are using a lot of solar energy at this point, primarily small, battery-based systems. We spoke to hundreds of people about direct drive DC energy.

The long term impacts of those interactions remains to be seen. *The Budget* newspaper -- a paper read among the Amish -- published an article about direct drive. The Amish are similar to LEF in some ways. They consciously limit their consumerism. They have farms and large families that function like small communities, and least in some ways. It seems like direct drive DC systems could be of benefit to them. If the Amish started using more direct drive DC systems, it would help the technology to spread.

In driving into the event area, we saw solar panels on many homes. We also saw quite a few very small horses. We were puzzled. The Amish are such practical people. What do they do with little horses that are too small to pull a plow or a buggy? Well, we got the answer at Horse Progress Days. Those small horses are tended by the children, and hooked up to very small buggies that the children use to zip all over (think Amish drag racing). Thus the kids learn the skills to drive larger horses as they become adults.



*Harvesting wheat with the combine*



*that has one belt and eight spinning shafts.*

### **Easy Reaper**

We mentioned in the last newsletter that we were using our Easy Reaper -- the simplified combine harvester. We harvested barley, oats, and more than an acre of wheat. We were enormously pleased. We have spoken to a few agricultural equipment manufacturers, and have not found anyone who wants to make Easy Reapers just yet. Our current plan is to keep working on them at LEF. We have been making some upgrades to our tooling to make that (and other projects) easier, though our shop is feeling pretty undersized at this point. We are trying to get pricing from some local fabricators who might make the drum and shell, which are the hardest parts for us to make. Meanwhile, we will probably be participating in a World Food Prize event called the Borlaug Dialogue. The dates are October 29 - 31 in Des Moines Iowa. That is a large event with thousands of participants from many academic, governmental and business entities. This may be a big opportunity for us to bring some attention to the project.

And, here's a video of cutting wheat with the Easy Reaper: <https://www.youtube.com/watch?v=HxfZfPWjFc4>

## The Farm

The farm is doing pretty well this year, although the rabbits ate most of the cantalopes, the deer went after over fence to get to the beans and peanuts, and did considerable damage to the watermelons. The birds ate a lot of the blueberries, and now a very large, and not very shy, black bear has taken to ripping the limbs off the pear trees and helping himself. Other than that, things are great.

We are canning lots of peaches. We have quite a bit of fruit in spite of the managerie of animals showing up at the dinner table. The corn crop is untouched thanks to Otto's diligent efforts. Last fall, a landscaper brought us a huge pile of leaves. Those are great for building soil, so we did some large scale sheet mulching. That was a mixed bag. The leaf mulch worked amazingly well with our spring potato crop, it was our best in years. The melons were more challenging; we should have transplanted them as the leaves tend to cool the soil and blow around a bit, which makes seed sprouting difficult. Then the rabbits showed up.

We are moving into the peak of harvest. Our seeds crops are a bit smaller than past years, but still some considerable work. We are looking forward to the persimmons, as well as making apple sauce, and perhaps some pear sauce, depending on the activities of the bear.

We look forward to hearing from folks who can help us set up speaking events. Please support us if you can.

*Living Energy Farm is a project to build a demonstration farm, community, and education center in Louisa County that uses no fossil fuels. For more information see our website [www.livingenergyfarm.org](http://www.livingenergyfarm.org), or contact us at [livingenergyfarm@gmail.com](mailto:livingenergyfarm@gmail.com) or Living Energy Farm, 1022 Bibb Store Rd, Louisa VA, 23093. Donations to the Living Energy Farm Institute are tax deductible. **To make tax deductible donations, do not go to the Virginia Organizing website, go here instead: <https://donatenow.networkforgood.org/1388125>** **Make sure to designate your donation for Living Energy Institute.***

## Articles and videos about LEF:

Low-Tech Magazine (based in France) did an lengthy, well-researched article, largely about LEF, entitled **Direct Solar Power: Off-Grid Without Batteries**. It's at <https://solar.lowtechmagazine.com/2023/08/direct-solar-power-off-grid-without-batteries/> That article talks a lot about optimal utilization, translate "community is the magic bullet that makes renewable energy work."



*How many pears is a large black bear allowed to eat?  
As many as he wants, apparently...*

Matt Dhillon at Cville Weekly did one of the best brief summaries of LEF we have ever seen. The article is entitled **Power Shift, Award-winning Living Energy Farm Makes Living Off-grid Sustainable**. It is at <https://www.c-ville.com/power-shift>

Truthdig did an article on LEF by Megan McGee, an excellent review of our work in Puerto Rico. It is entitled **Decolonizing Puerto Rico Through Solar Power**. It's at <https://www.truthdig.com/articles/decolonizing-puerto-rico-through-solar-power/>

We continue to post new videos on Youtube. The latest is *Solar Power Systems That Last Forever*, focused on our solar powered kitchen. See <https://youtu.be/6XiHClx8d2Q>

### **How to Never Pay an Electric Bill**

<https://www.youtube.com/watch?v=N5Wk7inoIxI&t=201s>

This video is a walk-through of our energy systems at Living Energy Farm. It is a concise summary of how these systems work, and why they are not in common use already.

### **Solar Installations In The Navajo (Dine') And Hopi Reservations, March 2020**

<http://livingenergyfarm.org/solar-installations-2020/>

This is a photo essay about our project to bring durable solar energy systems to the Dine' and Hopi Reservations, where thousands of people live without grid power involuntarily.

### **Support Living Energy Farm's Climate Justice Campaign, and Bring DC Microgrids to People Who Need Them**

<http://livingenergyfarm.org/support-our-climate-justice-campaign/>

This is an updated web page describing our broader social justice ambitions.

**How to Live Without Fossil Fuel (Introductory Video)** <https://www.youtube.com/watch?v=Ri2U6u8p65E>

**Powering a Community with Solar Electricity** (LEF has the only DC powered community that we know of, here's how it works) <https://www.youtube.com/watch?v=FvdExgvHnRI&t=23s>

**The Best Way to Store Off-Grid Energy** <https://www.youtube.com/watch?v=2wOxQ3sL9zc>

**Batteries that Last (almost) Forever** <https://www.youtube.com/watch?v=dfrgLsyFs0E>

Virginia Homegrown created a program at LEF (the LEF part starts at the 29 minute mark in the program)

<https://www.youtube.com/watch?v=MDGP0C9MIzU>

International Permaculture has done 2 articles on LEF. One is in issue #93, Autumn 2017, and the second is in issue #94, Winter 2017. See <https://www.permaculture.co.uk/>

Article about LEF at the Atlantic Online Magazine

<https://www.theatlantic.com/politics/archive/2017/01/anarchism-intentional-communities-trump/513086/>

Article about LEF in The Central Virginian

<http://www.livingenergyfarm.org/cvarticle.pdf>

LEF on CNN

<http://www.cnn.com/interactive/2015/09/us/communes-american-story/>

Cville weekly in Charlottesville VA

<http://www.c-ville.com/off-grid-model-environmentalism-made-easy/#.VcHobF054yo>