Living Energy Farm
September - October 2025 Newsletter

Living Energy Farm 15th Anniversary Celebration November 15

Come to LEF and celebrate our 15th anniversary! We will start around 2 PM. We will provide some food, but feel free to bring your favorite party snacks, as well as musical instruments. We are trying to fix up our road, but in the short term that means disturbed dirt and no vehicle access. You will have to walk a half mile in and back out. (In the future the road will be much better...) Address is **1022 Bibb Store Road, Louisa VA, 23093.** Beware that GPS often sends people to our neighbor's house. We will have a bright flashing yellow light next to our driveway that afternoon.

Direct Drive DC Microgrids (D3M) in Africa

Project Peanut Butter, Sierra Leone. Producing hundreds of tons of product per year, it is not a small facility.

Our friend Ryan from Cal Poly is currently traveling in Africa. He is helping with several projects, including looking for sites for D3M demonstration projects. He also spent a week at the Project Peanut Butter production facility in Sierra Leone to assess the suitability of converting it to D3M. His work is ongoing, and we have had a lot of communication back and forth on the technical details. To learn more about Ryan's travels and his search for potential sites for D3M (which he calls DDS, for direct drive solar) check out his blog which is available here.

Supporting Water Security in Richmond

In January 2025, the city of Richmond (one hour east of LEF) experienced a city-wide water system failure, which started because of a winter storm. Most of the city had no water pressure for days, while parts were without pressure for almost a week.

Even in normal times, boil water advisories are commonplace in Richmond. These system failures are often related to weather events, which are becoming more extreme. The Climate Mobilization Project is a nonprofit that works to build survival skills and infrastructure among low income communities that bear the brunt of the impact these climate emergencies. In April 2025, they partnered with Mutual Aid Disaster Relief (MADR) and Living Energy Lights to train community organizers from Richmond in skills related to building resilient water infrastructure.

After the training, MADR came forward with an offer of financial support for the creation of long-term autonomous water infrastructure in the city of Richmond. Two projects represented at the training stood out as ideal community hubs for distributing water in an emergency: Meadowbridge Community Market, a free store that distributes food and supplies every Saturday, and Mosby Justice Garden, an educational hub and the only black-owned community garden in the city of Richmond.

MADR wants to support projects that are scalable and can be replicated throughout the city. Rainwater catchment is much less expensive than drilling a well, and avoids potential groundwater contamination issues. For these reasons, these projects will likely be focused on rainwater catchment. LEL will support with setting up the solar water pumping to pressurize the filtration system. We're excited to be involved with pro-actively preparing communities for water and power emergencies that are likely to become more frequent in the future. Stay tuned for more updates.

Biogas Tractor

Back at the farm, we have started working again on our biogas tractor project. Along the way, we are making improvements to help the digester (named Seymour) do his thing. We have installed a large peristaltic pump to help push feedstock into Seymour. We have improved the pumping of our biogas toilet with a manual bilge pump.

The burnable component of biogas is methane, which is natural gas. It has very low density. We were thinking we would compress the gas into high-pressure cylinders for use on a small tractor, but at this point, we are moving toward using larger propane tanks at more moderate pressure. We have an International Harvester Cub 154 and a Satoh S550G. Those are both 15 horsepower (HP), energy efficient tractors (that we were able to get at modest prices). The intent is run the farm with 15 HP. To that end, we are modifying our farming operations. We have gotten rid of lawnmowers and brush hogs in favor of sickle mowers. We are trying to replace plowing with a mix of no till/ strip till, and the use of something called a 'disc tiller.' That's like a heavy duty disc that requires a lot less energy to use than a plow. We will keep you posted as this project evolves.

Digging peanuts with our new one-row peanut digger. Works great! We hope to be running that tractor on biogas soon.

The Glorious Persimmon

We have brought in the harvest this year. We grew more peanuts than we have in the past. For calorie dense plant foods, peanuts are the best we can grow. Other oily nuts and seeds (sunflowers, pecans) may taste great, but are very vulnerable to wild animals. Peanuts are a lot of work, but we are finding ways to make them less work. We found a Chinese manufactured one-row peanut digger at a very

modest price on Craigslist. It works well. We also use a very simple peanut stripper, shaped like a long, narrow V. You simply pull the peanuts plants through it and it strips off the nuts.

We have grafted a lot of domestic persimmons onto the wild persimmon saplings that are ubiquitous in this area. One could say it's a good year for persimmons, but every year is a good year for persimmons! In Asia, persimmons (kaki) have a long, esteemed history. Our favorites are the American/ Asian crosses, those being Rosseyanka, Nikita's Gift, Zima Khurma, and Kassandra. Some of the kakis are quite delightful as well, though not necessarily cold hardy enough for growing at LEF proper. We grow lots of crunchy persimmons as well. This year we have quite a glorious abundance of all kinds of persimmons, and it is delightful. We dry lots of them, and they are candy.

Building Legitimacy for D3M

D3M is the energy system we have at LEF. It is based on conservationist design that reduces energy demand, and then doing the work that needs to be done with maximum efficiency. In that context, direct drive solar electricity (without batteries) is an enormously useful tool. We have supported projects in Jamaica, Puerto Rico, and Trinidad.

Jamaica and Cuba have been badly impacted by hurricane Melissa. We are not a relief organization and cannot help much with immediate needs. In the longer term, D3M is much cheaper than grid power, and far less subject to damage from storms. Cuba and Jamaica are going to spend far more money re-building power lines than it would take to build D3M in the next couple of years. We have done two small projects in Jamaica. Communications with folks from the Cuban Embassy and the Ministry of Energy and Mines are lingering along.

We feel like we have found a very powerful tool. D3M can provide modern services without coal, nuclear, natural gas, or centralized "renewable" energy systems like massive solar fields. D3M could allow people to live a modern lifestyle with a radically lower environmental footprint. Global electricity prices range from $.10 to $.50 USD per kilowatt hour (KWH). Measured at the solar panel, solar power extrapolated over a 25 year period is less than $.01 per KWH. That's less than a penny per kilowatt hour. But for energy systems that are designed to run all day and night, the intermittency of sunshine is crippling. *D3M can deliver energy about 1/20th the global average electricity costs, but that only works with systems designed to compensate for intermittency.*

We have not succeeded thus far in building legitimacy for D3M on any larger scale. We face a pernicious cycle in which massive investments are poured into centralized energy systems and then no funding is left for D3M. Even solar projects are limited to massive, environmentally damaging solar fields and large scale batteries that imitate boilers in performance. D3M lacks any recognition as a viable alternative, and has not (thus far) attracted any large scale investment. D3M is not free. Effective decentralized renewable energy systems like D3M require on-site investment. Overall, D3M is much cheaper, especially over the long term, but D3M cannot work effectively if it is not taken seriously.

D3M makes grid power obsolete, but once all the money is spent building massive centralized systems, then things like good quality solar refrigerators get called "expensive." A good solar fridge costs four times as much per cubic foot of capacity as a grid powered fridge, but the solar fridge needs no grid, no coal, no nuclear, no natural gas, no solar fields, and no batteries. Refrigerators are the most expensive solar appliance we install. The price of running a myriad other farm, kitchen, and shop tools with D3M is extremely low, almost unmeasurable. We use inexpensive DC motors. The motors and the solar panels last for decades. The daily energy cost is infinitesimal. But it only works if you build it to work on high voltage solar electricity.

We cannot address the broader ecological crisis until we shift investment from centralized energy systems to decentralized systems. Even our most "progressive" environmental organizations have failed to notice this because they remain woefully uninformed about the difference between

centralized and decentralized energy systems like D3M. It is not entirely clear how or how long it is going to take to get past this roadblock. Any assistance anyone can offer is greatly appreciated. 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, or contact us at livingenergyfarm@gmail.com or Living Energy Farm, 1022 Bibb Store Rd, Louisa VA, 23093. Donations to the Living Energy Farm Institute are tax deductible. ***Click here to make a*** tax deductible donation***. Make sure to designate your donation for Living Energy Institute.***

Articles, Videos, and Podcasts about LEF are here. https://livingenergyfarm.org/articles-and-videos/