Living Energy Farm
April - May 2022 Newsletter

Friends of LEF,

we are going to do a slightly abbreviated newsletter right now, just so we can keep you up to date with what's going on. We have opened a project in Puerto Rico. We have made overtures to numerous organizations there. Our current working partners are mostly centered around an organization called "El Departmento de la Comida," or "The Food Department." (The organization is fully cooperative, but the name is a bit of a tongue-in-cheek jab at government inefficacy.) We are bringing up 7 people from Puerto Rico in July, and more in August to build relationships, run a bunch of workshops, and hopefully plant the seeds of durable, affordable energy self sufficiency in Puerto Rico. The folks we have been working with in Jamaica are trying to come up as well, perhaps in August. We are super-excited about these circumstances.

We mentioned in the last newsletter that our funding had reached a level that is now allowing us to begin importing DC equipment. We have ordered a lot of equipment, including batteries from three companies, and small DC fans. We are still struggling to find a decent, daylight drive DC refrigerator. Sundanzer appears to have stopped distribution. Sunstar in Indiana makes a good refrigerator, but it does not run daylight drive and has an off-brand compressor. We brought in a fridge from a Chinese company called Braktek, but it does not suite our needs. (Insulation too thin, too much electronics.) We have found a French company called Freecold that has what appears be an excellent daylight drive unit (and they are very clear about advertising it as such), but we do not yet know the cost of bringing those in. We are going to pursue putting a daylight drive Secop/ Danfoss compressor in the Sunstar, as well as trying to see if the Freecold units will work.

The farm is running full tilt, albeit with a smaller batch of seed crops than last year. Shipping sweet potatoes is also running full tilt. We have had a real struggle meeting orders this year because we have had such a cool spring. Sweet potatoes are heat-loving plants. Our producers have been having a hard time producing enough slips (plants) to meet out orders. We do have a strong compliment of computer savvy people at LEF now, and Nick has made a huge difference is managing the data. That's been a big headache in the past. We ship many thousands of orders. Keeping that process orderly is no small feat.

The simplified harvester has been in the field a half dozen times to try to refine the intake process. I think we have that sorted out. We are only a few weeks away from wheat harvest time. The big questions that remain with the harvester are simply how well it work, and if it does work well, how well can we publicize it. The wastage rate is a big open question with this design (as with any harvesting process) that can only be answered once we put it in a field of mature grain. If this machine works well, it could be hugely important for small farmers all over the world. But just because we feel that way does not mean it will get the attention it needs. We are putting a lot of work into it. Wish us luck.

We are also continuing to develop a DC washing machine. The basic design, with a tilted drum kind of like a cement mixer, seems like it will work. We are swapping to a higher torque gearmotor. We have an "arduino" (that's a small computer, about $10) that can control the motor. That will make the machine largely automatic, like a "real" washer. It seems like it will be an effective washing machine for a daylight drive household or community.

We are continuing to develop the Insulated Solar Cookers, or ISECs. We are realizing that our homemade burners are not durable, even after several modifications to try to correct the problem. All of the toasters and what not in the world (that have nickel chromium burners like we are using) have spot welds on the burner wires. So we just got a spot welder (pretty cheap) to try that. As we have said, daylight drive is such a "no brainer" that it really is only a matter of time before this technology starts spreading rapidly, particularly in warmer climates. Our friends working on the ISECs in Malawi are already bringing in shipping containers of

Chinese made daylight drive rice cookers. We have ordered a couple of test models and may import them as well. We want to make them ourselves even if we import them, and even if our homemade ones are more expensive, because we can make much nicer ovens and we want to be empower people to create this technology.

Our biogas system is currently being completely annoying. It's our third generation system. We do not have enough solar heat going into our now-much-larger tank to make the archaea (the bugs that make the gas) happy. We have more thermal panels. It's the next project once we get the harvester moved further along.

Alexis conducted a presentation as part of a program sponsored by a division of the French government. The links are here
https://www.youtube.com/watch?v=mdtyfEfy90Y
and here
https://www.youtube.com/watch?v=P1CMwChC3vE
We have been in communication with a French PhD student who is studying a project on Reunion Island to develop computer controlled daylight drive systems for maximizing efficiency in middle class homes. She is the speaker after Alexis in the second video. There are similar efforts in India to market daylight drive equipment in areas with unreliable grid power. That too is focused on wealthier consumers. Are those uses of daylight drive a good thing, or a bad thing? It's a complicated question -- what level of consumption is truly sustainable, and how do we get there?

We found an interesting academic paper about daylight drive refrigerators that's over 20 years old. (It was authored by some NASA scientists and the guy who started Sundanzer.) Interestingly, that paper assumes that the technology would grow rapidly once it was developed. But it hasn't. The daylight drive rice cookers cost $30 and they are spreading. The Sundanzer cost well over $1000 and did not spread. The people who can afford a full daylight drive conversion don't want it because they have reliable grid power, and because we have been willing to lie to ourselves about the environmental impact of "grid tie" and industrial "renewable" energy systems. The people who need daylight drive the most -- low income communities -- cannot afford much, and thus the market has not grown. These are the basic problems we face. If we can get daylight drive to take root, then the need for coal, natural gas, nuclear, and industrial "renewable' energy grids for household energy will be eliminated.

LEF is trying to grow this technology specifically to empower working class communities. The environmental benefits could be huge if we can get the technology to really take root. We are clearly making headway, though it's not always a cake walk. Mostly people think we work really hard. Sometimes yes, sometimes no. Right now, we are very, very busy. That's all for now. 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. To make tax deductible donations, go to the Virginia Organizing website at https://virginia-organizing.org/. Make sure to designate your donation for Living Energy Institute (formerly the Living Energy Education Fund).

Articles and videos about LEF:

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