

Living Energy Farm

November - December 2017 Newsletter

Upcoming Events

LEF's Wholistic Sustainability Weekend Immersive, Focused on Energy, Jan 19 - 21

1022 Bibb Store Rd, Louisa VA 23093. Contact Brie at 443-417-7328, briennagerard at gmail.com
The fee for the weekend is \$150, work trade options are available.

Have you ever seen a 100 year old battery that still works? Would you like to learn how to wire a homestead using DC electricity? Would you like to learn how to manage organic gardens and orchards that feed you year-round? Would you like to be part of a movement to create sustainable villages? Come and stay with us for a weekend, experience living without fossil fuel or grid electricity, eat organic homegrown foods in January.

Saturday's events will be a detailed tour of LEF, and a discussion of wholistic sustainability, energy use and production in a historical context, and practical solutions to the interconnected environmental crises of our time.

Sunday's workshop is called the Tools and Technologies of Living Without Fossil Fuel. At LEF, we have pioneered the creation of solar powered domestic economy that is unique, effective, and durable. Our integrated village economy uses high-voltage DC daylight drive motors. Our lighting system uses very durable nickel-iron batteries. We will teach you the basics of electricity, and show you how to wire solar electric panels, both high voltage and low voltage systems.

We will show you how to put together battery banks, and explain the difference between different kinds of batteries. We will show you some of the basics of electrical wiring for both high voltage and low voltage electrical systems. You will work on these projects with your own hands, so you will know how to do it yourself.

For a more detailed schedule of events, visit <http://livingenergyfarm.org/workshops/2018jan19immersive.html>
To register, see our google doc https://docs.google.com/forms/d/1Blr5rPywe018w-Sd-M08JH4doFy6xnRNWHJWU8iUfC8/viewform?edit_requested=true

Orchard Planning and Pruning

Come learn how to grow food on trees, without chemicals! If you buy everything in a mainstream nursery catalog and plant it, you will not grow much food. You have to know what to plant, and how to take care of it. We will also talk about pruning and winter maintenance of fruit trees. The best food producing trees do not need a lot of pruning, but it is a skill you need to manage your own orchard. Cost \$25 at the door. **Saturday, Feb 3rd, 9 AM to 3 PM, at 912 Woodfolk Drive, Charlottesville VA, 22902. RSVP livingenergyfarm at gmail.com**

LEF Update

We have finished sorting and sifting our seeds for this year. Overall, the harvest was good. We have finished grading and repairing the land in the immediate vicinity of the main house after the final stage of construction had made a mess. We were pretty careful about keeping topsoil separate so we could put it back on top. Now we have some excellent space for berries and fruits, and much, much prettier grounds. Apart from the unfortunate slog of childhood colds and flus, the kids are great. We continue to attract some really amazing interns and people who come out to help.

With the arrival of winter, we are thoroughly enjoying our solar powered community. Our main house and

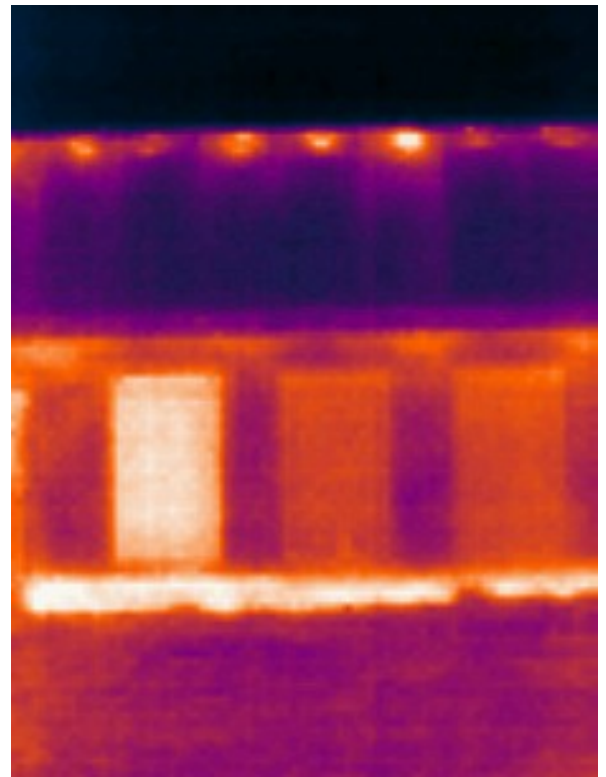
kitchen stay delightfully warm most of the time. When the weather turns cool and cloudy, the buildings cool very slowly. We don't have to shovel firewood or pay bills to keep us warm. We just listen to the pleasant hum of DC powered blowers that take heat from the roof collectors during the day and pump it under the floor.

We are continuing to improve our DC electrical systems as well. We have wired our shop now with high voltage and low voltage DC power (wahoo!). Now we can plug in machines and run them anytime during the day without having to string extension cords all over. We have improved our charging systems for laptops and smartphones. Our charging system was an experiment whereby we installed a cheap \$30 voltage regulator (as opposed to a \$350 charge controller). The voltage regulator knocks the 35 or so volts coming off the photovoltaic panel down to a uniform 12.3 volts DC, so we can charge anything we want through automotive cigarette lighter plugs. Any USB device charges as well. Like the rest of our DC economy, it floats nicely. As the weather fluctuates, it takes care of itself.

We have finished the final insulation touches on our solar hot water systems (thanks to Misha). We can take a hot shower even after several days of cloudy weather. Another improvement is the addition of thermal curtains in the main house. They make a BIG difference. On tours, we tell people that a normal double-pane windows can equal a super-quality windows that cost ten times as much if you just put a thermal curtain in front of the window at night. With our main living room, it has a lot of south-facing glass. Before the curtains, you could step into the room and feel the heat loss in the morning. Misha and Deanna made some great curtains that are as lovely as they are functional. The difference is striking. The living room is noticeably warmer on a cold winter morning. Their design is at kumeproject.com



New thermal curtains at LEF, they save a huge amount of heat and look lovely too!



Infrared picture of LEF's house at night. The window on the left (brighter) shows the thermal leakage from a window NOT covered with a thermal curtain. The other windows in the photo had the curtains down. The warmth across the bottom is the heat from our solar heated floor passing through 4 inches of foam insulation.

Food From Trees, Enjoying Winter Fruit!

When we give tours of LEF, we mention that one of our goals is to see how much food we can grow on trees. And that takes a while. But this year, we have definitely started to taste the benefits. Arboreal food production has the best drought resistance of any form of food production, zero soil erosion, builds soil and absorbs carbon from the atmosphere. This year we canned well over a hundred quarts of peaches and pear-apple sauce (with our Amish-made woodfired canner from DS Machine in PA). Our special Wintersweet pears had a good crop, and



Breakfast platter of homegrown fruit, late December. Peaches, applesauce, persimmons, and kiwis. Yum!

we ate them well into November. We dried some jujubes. They are super-easy to dry. Just toss them whole into the dryer, and they take care of themselves. The final product is delightfully more flavorful than any imported jujubes we have tasted. We had a moderate harvest of both hardy kiwis and fuzzy kiwis. The hardy ones come and go, but we are still enjoying our homegrown fuzzy kiwis. Golly are they sweet! And in the middle of winter, no less.

Now we are at Christmas time, and most of persimmons are still on the shelf, ripening ever so slowly into that magic confection of ripened persimmon. We are learning as we go. We know that in Asia, dried persimmons were a

significant food source historically. We are finding that in our climate, it works fine to just keep them on trays (in the shop) outdoors. We haven't been drying them, just letting them ripen ever so slowly and (in the case of some persons to remain unmentioned), eating a dozen a day. We are refining our tastes as well. Deb and Alexis' kids, Rosa and Nika are named Rosseyanka and Nikita after those most delightful persimmon varieties. They remain our favorites. The Nikita's Gift persimmons are mostly gone this time of year, whereas the Rosseyankas are just getting started. No joke. The Saigos are our favorites among the Asian persimmons, for their very predictable lack of puckeriness and wonderful texture. We had lots of Jiros in the early season, though they have since been consumed. Lesson learned? Rosas and Nikas a great! (And very cold hardy too.) The Rosseyanka and Nikita's Gift persimmons are Asian/ American crosses (kaki x virginiana), exhibiting the best of east meets west. Deb has been informed that some new varieties of cold hardy Asian/ American cross persimmons are now available. Three more kids -- Kasandra, Mikkus, and Zima Khurma? Deb is not convinced, but we do have the plants at least....

DC Microgrids -- How Does the LEF Model Fit Into the Broader Picture?

We feel like we have found something good at LEF. Our integrated residential energy system is working great. We also try to be as sober as possible in trying to assess what we have done in the context of what other people might need in other communities. We have been working quite a bit the last couple of months to understand better the "microgrid" movement. That is the term used for various systems that are being built all over the world to supply electricity through diversified means instead of (usually in addition to) conventional grid power. We have joined some lists and associations of people who design and install microgrids.

Microgrids can vary from smallish to large, multi-billion dollar installations. As far as we can tell, all of the microgrids we have seen have a few things in common. They are all, like conventional grid power, linear systems where energy flows from one set of sources, through a distribution network to households to power the same kind of equipment one would see in house powered with conventional grid power. The focus remains on generating bulk energy, rather than on providing services per se. And the capital investment remains at the generation end, with users paying out only in small payments. The track record of that scheme is clear. The average refrigerator made in the U.S. in the 1940s was more efficient than the average refrigerator made in the 1970s. That's because people want to buy cheap, and pay for energy in small allotments. Having all the capital investment in generating bulk energy encourages inefficiency. Cheap appliances still work, over-built or badly insulated houses still stay warm. The perverse incentives of grid power would appear to remain in place with all of the microgrid systems we can find.

We have not found any documentation of anyone using DC power the we use it at LEF. The LEF DC microgrid approach (that's what we are calling our integrated village DC energy system) is the only micorgrid system that:

- 1) is multilinear. Numerous power sources supply numerous demands. There is no grid failure, only slowly weakening systems that allow users to conserve and thus preserve their energy supply.
- 2) focuses on providing *services* rather than bulk energy. At LEF, we do not supply bulk AC power as all other systems do, rather we try to find the cheapest, simplest, most effective way to get things done. That often means storing energy in forms other than electricity.
- 3) is modular, so you can install some supply hardware and services, and install more later as resources allow.
- 4) is based on machines and technologies designed to last for decades instead of a few years.
- 5) puts the capital investment at the user end, which encourages efficiency.
- 6) is cheap enough to provide modern comforts to communities of modest means around the world.

At this point, a sober assessment is that we need to spread this model. Our power supply system is much better in many ways for people of modest means. It could allow us to help low income people all over the world who would never have hope of electrical service through centralized systems. We are continuing discussions with numerous really amazing projects in the Caribbean and Latin America. We will have to see where it goes.

A Sad Farewell to Milo

We try to keep a positive focus on things, in our lives, in our newsletter. The reality is that we have been at this for seven years now, and it has not all been roses. We have had our moments of joy and despair, and some conflict among people who come and go. One person we have counted on in helping us figure out our DC electric village has been Milo the electrician. Well known among intentional communities, Milo has been our professional commercial electrician on call. Apart from coming out and twisting a bunch of wires for us, he has been consistently available for consultation and help through email and the phone. The quality of his work was consistently impeccable. He was only person we could find who had any experience and knowledge of DC electricity as it relates to building code. This was vital for us. Even though the county was very accommodating with our unusual design, there was a change a personnel from when we started to when we needed our electrical inspection. Milo stepped in and helped, again. Things would have been difficult without him. He never hesitated to help, over these years now, even when things seemed to be at their worst. We were very, very sad to learn recently that Milo has passed, at an untimely age. There are no words for this kind of loss. We wish you well Milo in your celestial journey.

Please support us if you can.

Articles and videos about LEF:

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>

First video on youtube

<https://www.youtube.com/watch?v=ppTBO8d6jhY>

Second video on youtube

https://www.youtube.com/watch?v=wdSX_TIYkD4

Video on vimeo

<https://vimeo.com/128744981>

Slideshow produced by Alexis a while ago

https://www.youtube.com/watch?v=4x_C3iScoAw

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 Education Fund are tax deductible.