



Rails mount on the roof and solar panels mount on the rails

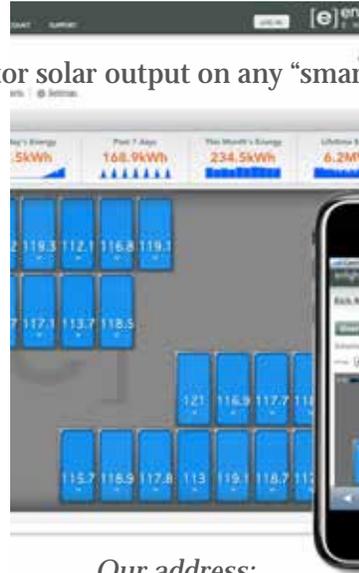


*The Mircoinverter:
Only works when it “sees” the grid
so it is safe! Converts the DC from
the panel to household current.*



**Finished on the roof.
Zero maintenance.**

Monitor solar output on any “smart” device



*Our address:
**Flint Hills Renewable Energy &
Efficiency Cooperative, Inc.**
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Manhattan, KS, 66502*

***Our Corporate Officers**
President: William Dorsett
Vice President: pending
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Flint Hills Renewable Energy and Efficiency Co-op

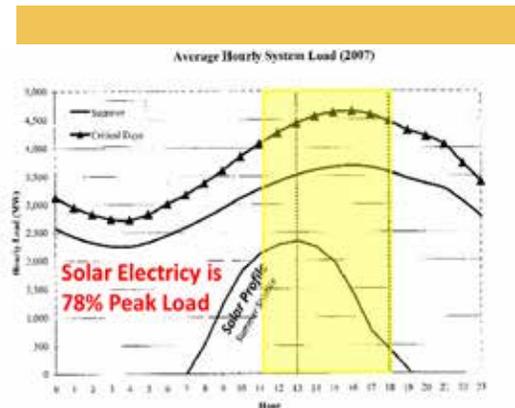


*FHREEC is a collective of
volunteers who are
dedicated to efficiency,
and sustainable energy*

www.fhrec.org

FAQ (& IAQ infrequently asked questions)

- 1. What is PV and DG?** PV is the abbreviation for Photovoltaic which refers to generating electricity with solar panels. DG is distributed generation (the opposite of centralized generation like utility scale coal, nuclear, wind farms, etc. power plants)
- 2. Could I put solar panels on my home?** The only obstacles are shade, local covenants, and money for the initial investment. Since the systems are modular, you can put up one panel (for about \$400 DIY after tax credit) and add more later.
- 3. How well do solar panels hold up to hail?** Golf ball size hail will bounce off. We know of a grapefruit size hail ball which destroyed a panel. Fortunately, it was insured with the roof.
- 4. Is there any rebates or tax credits?** There is currently a 30% federal tax credit which will slowly sunset starting Jan. 2020. Check for renewable energy rebates in your area.
- 5. How much electricity will be generated with 10 panels?** 10 panels might produce 1/2 of a typical household use. Energy efficiency is still the simplest way to cut electricity use. Panels degrade 1/2%/year.
- 6. How big should I build my PV system?** It depends on the net meter contract (how much you will get paid for excess power) which your utility company offers. But ANY solar electricity generated that you consume is electricity you didn't have to buy.
- 7. How heavy are the panels? Can my roof hold them?** Panels weigh about 48 lbs. each. Standard codes require no additional roof structure if there is only one layer of shingles.
- 8. Can I get off the grid once I have solar panels?** Not without batteries. The systems are designed to work with the grid. **This makes them safe and easy.**
- 9. Will PV pay for itself?** Yes. How quickly depends on conditions and laws. Currently the savings is equivalent to a 7% savings account. It's like paying your electric bill in advance for 8 years and getting 17 (or more) years for free. Panels have a 25 yr. warranty.



Solar power helps in times of peak load (hot summer days) but currently 62% of Kansas power comes from fossil fuels
Solar panels produce clean energy and lasts for years!



GET INVOLVED: Are there like minded people near you? Can you start a co-op? We can help. We are all volunteers who want to promote renewable energy and reduce the use of fossil fuels.

FHREEC has installed over 50 systems and we hope we are just getting started.

10. What does the FHREEC Co-Op do? The Co-Op is comprised of volunteers who believe renewable energy is the way of the future. We promote energy efficiency in every way possible. We educate, guide, and help other members install PV systems by holding a "Sun Raiser" which is modeled after a neighborhood barn raising". We buy in bulk, pass savings on, and markup the hardware 15%.

11. What are the steps to getting PV? This depends on where you live. Some places require the city code agency to approve your plan. Then you apply for a net meter with the utility company.

12. How much will the utility company give me for the electricity which I sell back to them? This depends on your arrangement with the utility company. Most rural electrics reimburse 1:1. Westar is imposing a tariff in the form of demand fees.

13. Will the utility company ever send me a check for the electricity which I sold them? You must be dreaming. If you overbuild your system, you are sending them electricity for cheap which they sell to your neighbor. But isn't giving free power to the utility company preferred over burning fossil fuels?

14. What is Peak Load and why is it so important in the big picture? Peak load is the "rush hour" for electricity and all the infrastructure has to be sized to handle it. PV generators provide some help in this since hot sunny days usually translate to high solar output. A modernized grid uses DG solar to take the strain off the utility system.

15. What is Guerrilla Solar? If the utility company charges an excessive tariff, we may be forced to put up a few panels and not tell them. The electricity generated will go straight into a load in the house and will lower your purchased consumption. Then, using electricity when the sun shines makes the most use of your system. Software can keep any excess from the grid.

16. What innovations are occurring? Soon there will be an emergency preparedness feature. Our panels will work even if the grid is down but continue to be safe for linemen.