

THE GRIGGS CATTLE CO.

TOBY AND PAM GRIGGS

SOLAR PV



The Griggs Cattle Co. was initiated September 9, 2009 with agreement to purchase the major part of River Run Farm from Lee Stadnyk, former owner and also Professor of Botany at Northland College. The plan was to produce and raise grass-fed beef cattle for food on a commercial basis. We are 10 years into this operation and have achieved most of the initial goals we set out to accomplish. Annually we have produced around 20 calves and have harvested about 80% on a regular basis. Our primary customer became the Bayfield Foods Cooperative beginning January, 2013. We have been regularly selling to BFP our high-quality grass-fed beef products, for re-sale to their three outlets:

- Their CSA subscription customers;
- Their Wholesale Division, which serves many local, and not so local, restaurants and grocers; and
- The Northland College Food Services Department.

In addition, we have developed a customer group of families and individuals, locally and as far West as Duluth.

But you didn't come on this tour to listen to us brag about our successes in cattle production. You came to learn more about solar energy, and why you might want to purchase a system.

Why did we make this technological jump? From the beginning we realized how expensive electrical power can be. Our energy provider is and always has been Xcel Energy. We have used about 35000 kWh (kilowatt hours) annually, at a cost of around \$5000 per year. Our biggest consumer is our walk-in freezer which keeps our beef products well frozen. One of my MAJOR goals for the past several years has been to try and reduce this expense by at least 50%. But my challenge was, how? Trying to be energy conscious by not leaving lights on didn't have much effect. Tweaking and manipulating the

freezer schedule was tried but had little success. So, I started evaluating other means, like wind power and solar energy systems. All were grossly expensive. We eliminated wind power early on: noisy, not bird friendly, required considerable maintenance and had to climb up a tall tower to work on it. Then, I developed a friendship with Bill Bailey, who turned out to be a guru of solar energy. He taught me a lot about it. And I was almost ready to take the leap.

Then, in June of 2017 we met the folks from **Next Energy Solution, Inc.**, in Shell Lake, Wisconsin. After some meetings and explanations and generous concessions we decided to go solar, with NES. We chose the appropriate system, made the down payment, found a local lender eager to lend us the funds, and set a plan to do the install Spring of 2018. On May 5, 2018, we dug the first post hole. My part-time helper and I, working intermittently between cattle and farm chores, did all the rack and panel installation work. We were adequately assisted when necessary by the knowledgeable skills of **NES** from time to time. We employed the services of local electrician Jeff Jolma (Jolma Electrical Services) to lay the wiring from the panel rigs to our power control panel. And we went "on-line" July 7, 2018. Have not had a problem since. In our first 12 months of operations the system paid 67.8% of our electrical use. In my opinion it was the right thing to do.

Toby Griggs, co-owner

System Specifications:

- **Ready-to-install (RTI) system provided by Nest Energy Solution, Inc, Shell Lake: \$31,828.00**
- **System Specifications:** 16.2kW South-facing, 2 rack wooden construction, 30 Black Peimar 270- Watt Solar Panels per rack assembly, total 60 panels, 30-year Performance Warranty.
- **Inverter:** Fronius Primo 15.0-1; AFCI SBI compliant; built-in AC-DC disconnect; built-in web monitoring (WIFI required).
- **Racking:** Anodized aluminum contour racking & rails, integrated UL grounding clips, wires & wire holders.
- **Rack Mounting Unit:** Built from locally purchased Carlson Building Materials, Inc., pressure-treated lumber sizes 6"x4"x16', 2"x6"x10', 2"x8"x10' and 2"x8"x12'; galvanized carriage bolts/nuts/washers, 14x1x 1/2" galvanized lag screws, galvanized joist hangers; 48 bags Sakrete (24 vertical posts holes), miscellaneous materials to suit. **Total expenses Rack materials: \$7,886.68.**
- **Labor, part-time farm helper: 85 hours, \$750.00.**
- **Electrical Installation (Jolma Electric):** wire trench dug, wire laid, service panel installed/connected to Xcel meter: **Cost: \$3,978.00.**
- **Focus on Energy Grant: \$9,252.18 received.**
- **NES Completion Discount; \$5,000.00**
- **Total Actual Expense: \$30,190.50** (Does not include private loan interest of 2% annual of estimate 3-year payoff)