

SOLAR POWER AT LAZY LADY FARM: OVERVIEW OF A SYSTEM THAT PROVIDES ALL OF OUR
ELECTRICITY

Laini Fondiller, Lazy Lady Farm, Westfield

Laini has worked at her Lazy Lady farm for twenty years. She began with little financing and *no* electricity. The nearest pole was 3/8 mile away and would cost \$15,000 to extend to her house. Nonetheless, even if then farm didn't have electricity access, it still had energy needs, e.g. water, sheep shearing, pasteurizing, and milking. These demands increased as the farm began to concentrate on its cheesemaking and meat sales. Laini has used several strategies to bridge the gap. She gained special permission to pasteurize milk on a wood fired stove and rented freezer space somewhere else for the meat. She buried her cheese cave under five feet of dirt so that it stays around 55 degrees even on hot days without artificial cooling. And, at first, a generator supplied electricity where it was strictly necessary.

After a few years on her farm, Laini began to meet its electricity needs with solar panels. Using solar meant that she could build slowly, putting together arrays a few panels at a time, and also that she could retain her independence from the grid. Today, Laini has an array of twenty solar panels with a bank of batteries to store power and a generator for back up. She uses fourteen 75 Watt panels and six 50 Watt panels along with twelve 6 volt batteries connected into a 24 volt system.

The solar power on Lazy Lady Farm was as much a lesson in conserving electricity as in generating it via solar panels. Laini remains very cognizant of all her electricity uses. For example, when she has starter chicks she uses a 100 Watt bulb in a well-insulated, straw house and a thermostat to shut off the light when the room reaches temperature she wants. This arrangement consumes much less electricity than the standard practice of filling a room with chicks under a 220 Watt bulb that remains on. Laini also tracks phantom loads (sometimes referred to as standby power). These loads come from devices like radios that continue to draw electricity even when switched off. Utilities can help their customers do an energy audit, metering the electricity demand of different appliances, and finding places to cut their usage.

Laini uses 150 kWh every month on her farm, while the average household uses 600 kWh per month. She can go for 2-3 days without sun before her batteries run down and she has to switch to her generator. She is considering small wind to supplement the solar supply. Overall, Laini enjoys her independence and not receiving an electricity bill.

Electricity Demand on Lazy Lady Farm:

Electrical Uses:

- 1/3 HP Motor Vacuum pump
 - Pasteurizer
- 1/2 HP Motor Water pump
 - Fan in cheese room
 - Lights
 - Radio
 - Assorted electrical household items used on occasion

Non-electrical Items:

- Ripening cave for cheese
- 2 gas refrigerators
- 1 wood cookstove
- 1 wood stove
- 1 gas stove