

## MLEC Solar Array

- Energized July, 2015
- 20.5 kw Direct Current (DC)/18 kw Alternate Current (AC) System
- 50 – 410 Watt tenKsolar panels
- 36 – 500 watt Lead Solar MicroInverters
- Capable of producing 18 kilowatts (kws) per hour
- Total installed cost ranges from \$3-\$5 per watt
- The cost of installing a system this size ranges from \$54,000 to \$90,000
- The solar array averaged 1,720 kWhs/month in 2016
- An average home on MLEC's system uses 1,100 kWhs/month

## How Does Solar Power Work?

### 1. Solar panels

The sun shines on solar panels to create an electric current. The solar panels may be put on a building or in large groups called arrays.

### 2. Inverter

The current produced by the solar panels is direct current (DC) electricity. An inverter converts the current from DC to alternating current (AC) electricity.

### 3. Electricity

The electricity powers homes, farms, and businesses. Some power may be stored in a battery of an electric vehicle or converted to heat and stored in a water heater.

### 4. Cooperative

Extra electricity may be distributed to your electric cooperative system for other members to use.



Is solar electricity right for you? It depends on a number of factors. First, consider why you want to go solar. Are you trying to save money? Are you being environmentally conscience? Is it for backup power in an emergency? PV systems are tied to the grid for safety reasons. When the power goes out, the PV array shuts down, so it's not effective as a backup. (You would need to install a battery for that.)

The typical American home PV system produces 5 kWh per hour. How much of your home's annual use can be covered? Next, what's the cost? The average cost of a 5 kWh system is \$24,650 before any incentives. The most common incentive is a tax credit from the Federal Government.

Contact MLEC at 218-429-0432 or 888-433-4279 to discuss your plan. Talk to our energy experts, and let us help you decide what makes the most sense for your home.

A south-facing roof is the preferred direction for the placement of solar panels. Do trees shade the roof at any time? Next to darkness, shade is the natural enemy of solar panels. Is your roof structure capable of accepting the weight of the panels and wind or snow? Are there any neighborhoods or local regulations prohibiting solar panels?

If you live in an apartment, or are simply prohibited by cost - community solar may be an option. Community solar is when a group of owners invest in the construction. This creates large solar arrays in locations ideal for generating solar power. Subscriptions to community solar gardens produce electricity for the grid, which is measured and credited to subscribers on their monthly electricity bill. MLEC is researching the concept for our members who have an interest in a Solar Panel Garden.