1979 RABE HARDWARE

Drastically Reduce or Eliminate Your Electric Bill with

# SOLAR




Commercial Solar Guide

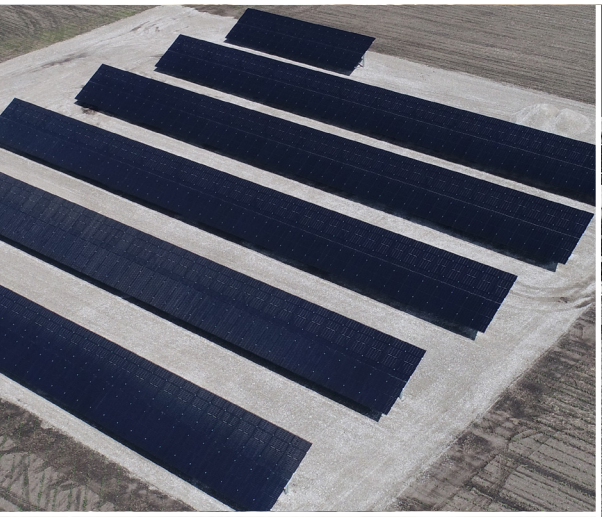
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**RabeSolar.com**


SOLO











"EVERY HOUR THE SUN BEAMS ONTO EARTH MORE THAN ENOUGH ENERGY TO SATISFY GLOBAL ENERGY NEEDS FOR AN ENTIRE YEAR."

*- National Geographic*



## EASTERN IOWANS ARE TURNING TO SOLAR ENERGY

A solar panel installation produces clean, cost-efficient energy harnessed by the sun that locks in energy costs while helping the environment. Over the last 10 years, the cost to install solar panels has dropped by more than 70 percent while the technology and durability has improved. Due to these factors, on-site power generation with solar panels is an extremely economical energy solution with a shorter payback time. Rabe Hardware's knowledge and experience will ensure you get the greatest return on your solar investment.

When you're ready to invest in a custom solar system for your operation call Rabe Hardware, Eastern Iowa's leader in commercial applications. From start to finish, the team at Rabe Hardware will make the entire process easy and hassle free.

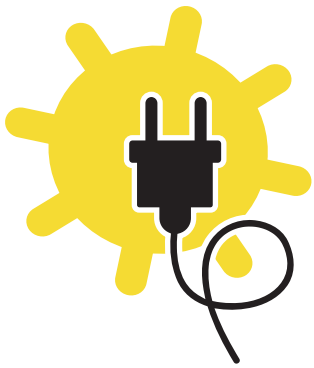


- Lock in energy costs for 25–30 years
- Rabe's power production guarantee
- Iowa sales tax exemption
- 5 year property tax exemption
- Commercial/ag rapid depreciation
- Produce 500 kWh/year per panel
- Flexible financing options

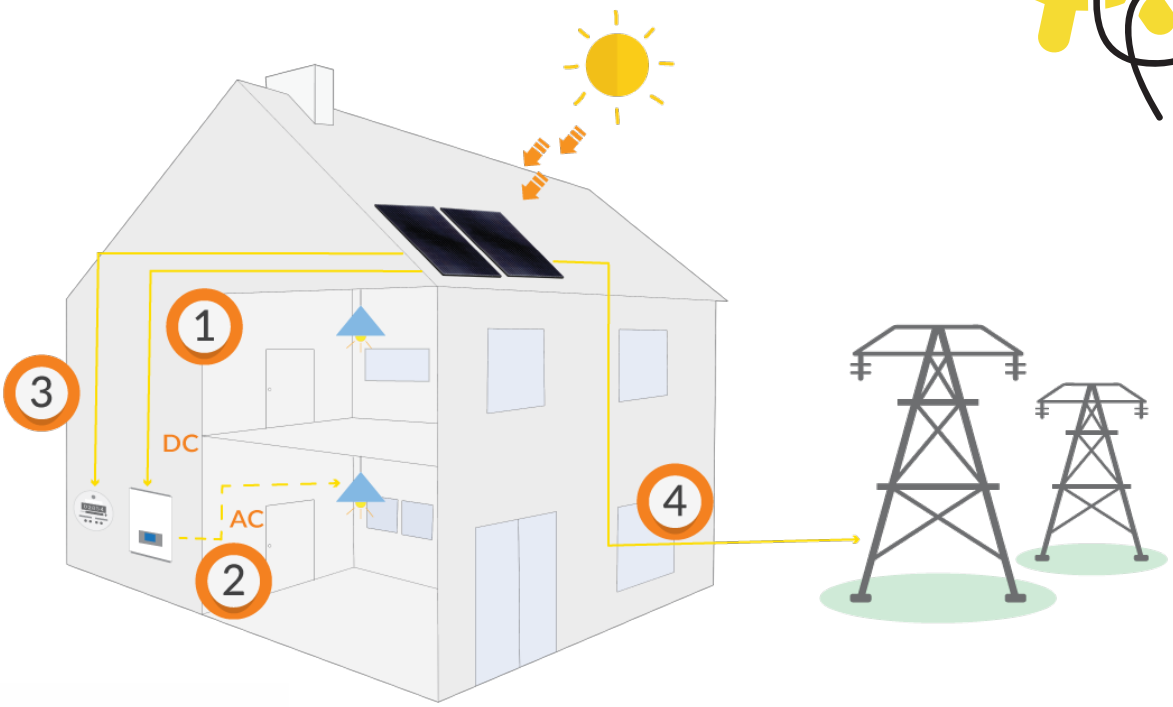
- 25-30 year panel warranty
- 12-25 year inverter warranty
- 5 year parts & labor warranty
- Licensed & certified electricians
- No batteries necessary
- Real-time monitoring (PC & Mobile)

# SOLAR BASICS

## WHAT IS SOLAR ENERGY?



- Solar Energy is radiant light and heat from the sun.
- Solar Energy is a clean and renewable source of energy.
- Solar Energy can be converted into usable energy such as electricity.








## HOW SOLAR WORKS

1. Solar panels contain solar cells, which have semiconductors that convert light into electrical energy. Direct current (DC) electricity is produced and routed to an inverter.
2. An inverter converts the electricity into alternating current (AC), which is used in consumer appliances, lighting, and heating and cooling systems. AC power from the solar system supplies power to your hog barn or other farm buildings.
3. Meters measure the amount of electrical energy produced by the panel and monitor performance of the system.
4. Electricity produced goes through the utility grid and the grid supplies additional power if needed.

# COMMON COMMERCIAL SETUP



SOLAR ARRAY




BACKUP GENERATOR



DISCONNECT




BI-DIRECTIONAL METER




AUTOMATIC TRANSFER SWITCH

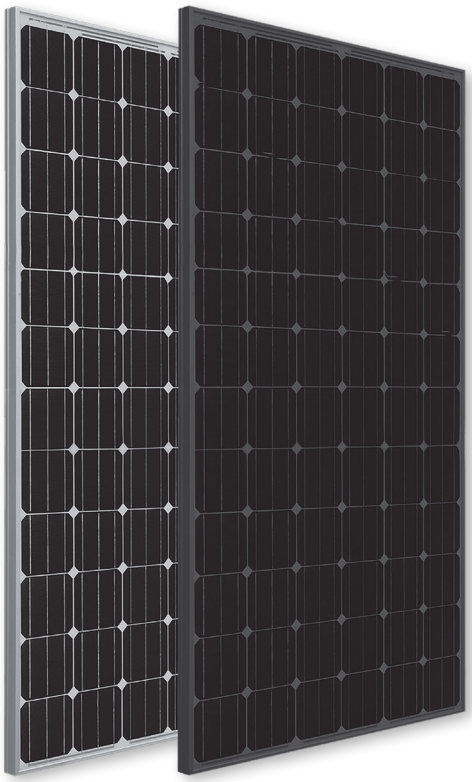


UTILITY GRID



ELECTRICAL USAGE

# CUSTOM SOLAR DESIGN



## HOW MANY SOLAR PANELS DO I NEED?

The number of solar panels varies depending on several factors including, but not limited to:

- Average annual kW usage
- Seasonal conditions
- The angle of the panel relative to the sun
- Number of daylight hours
- Atmospheric contaminants (i.e. dust, humidity, forest fires, etc.)
- Cloud cover and elevation

## ORIENTATION, TILT & SOUTHERN EXPOSURE

- In Iowa, the sun is visible in the southern sky. Orienting a solar array due south will provide the highest energy output.
- Arrays oriented east or west will have a 15-20% drop in performance while solar arrays oriented to the north will have an energy generation reduction of 30-45% as compared to an equally sized array that faces south.







## SOLAR ARRAY MOUNTS & RACKING

- Both **Roof Mount** and **Ground Mount** are available. In either case, panels should be clear of buildings, trees or any other obstructions that may cast a shadow.
- Ground-mounted systems are typically near the building or point of consumption.
- Durable all aluminum racking.

## WARRANTIES

- 25-30 Year Panel Warranty
- 12-25 Year Inverter Warranty
- 5 Year Rabe Parts & Labor Warranty

# REAL-TIME MONITORING

See and share your system's performance on the go: real-time insight to home energy production and usage. Gain visibility into your system performance in real-time with an intuitive, user-friendly app.



## KNOW THAT YOUR PV SYSTEM IS PRODUCING TO ITS MAXIMUM POTENTIAL.

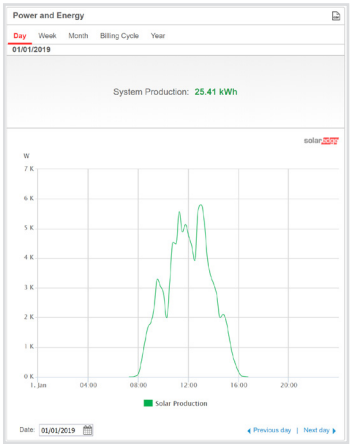
View historic and real-time energy production of your optimized system on the go with your smart phone.

## EASY TO USE CHARTS SHOW YOUR PV PERFORMANCE.

Compare today's production to past measurements.

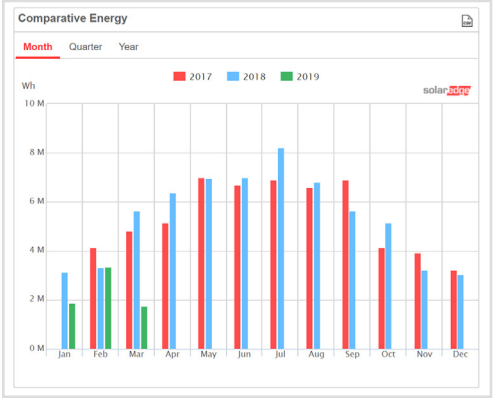
## WANT TO KNOW HOW YOUR PV SYSTEM STACKS UP AGAINST YOUR FRIENDS?

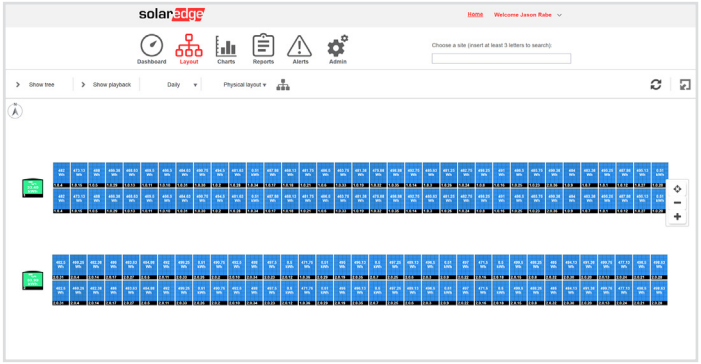
You can share real-time system performance details with your friends across many social platforms: email, messaging apps and more.




## REAL-TIME AND FORECASTED WEATHER DATA.

Evaluate your system's performance by understanding what environmental conditions affect energy production.



# SAVE WITH SOLAR INCENTIVES

## WHY SOLAR IS A SMART INVESTMENT IN IOWA

As electric costs continue to rise across Iowa, solar offers businesses a way to lock in energy savings for the next 25–30 years. Rather than being at the mercy of utility rate hikes, solar allows you to take control of what you pay for electricity long-term. If your property has good sun exposure and moderate to high electric bills, solar pays for itself over time - making it a smart long-term investment.

Solar INCENTIVES

### ▷ TAX EXEMPTIONS & CREDITS

- **Sales Tax Exemption**

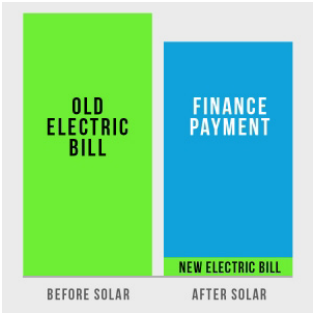
Iowa offers a 6% sales tax exemption on solar equipment, which lowers the upfront cost of your system.

- **Property Tax Exemption**

The Iowa Department of Revenue, under Iowa Code §441.21(8), mandates that the value of a solar system be excluded from the taxable property value for a period of 5 years.

- **Commercial Tax Credits**

Commercial solar systems qualify for the 30% Federal tax credit, but deadlines are firm: start construction by July 4, 2026 and finish within four years, or start later and complete installation by December 31, 2027.




### ▷ FINANCING

Rabe Hardware makes it possible for you to switch to solar power without incurring the upfront cost of a solar power system. With flexible financing options, you will see immediate savings on your electrical bills.

# SAVE WITH SOLAR INCENTIVES

## ▷ NET METERING IN IOWA

Many Iowa homeowners can also benefit from net metering, which is one of the most valuable solar advantages available.

**Why Net Metering Matters**
Depending on your utility, system size, and energy usage, net metering can significantly reduce—or even eliminate—your electric bill.

**What Is Net Metering*?**
Net metering allows your electric utility to act like your maintenance free solar battery. When your solar panels produce more electricity than your home needs, the extra power is sent to the grid. In return, you receive energy credits. When your system isn't producing enough power, like at night or on cloudy days, you can use those credits to offset the electricity you pull from the grid.

**** Net Metering explained in more detail on the next page.***

**Who Offers Net Metering?**
Most major utilities like Alliant Energy and MidAmerican energy offer annual net metering, where unused credits roll forward month to month and reset once per year. Others, like electric cooperatives and municipal utilities may also offer net metering, though they may only offer monthly net metering, where credits reset from month to month. Either option can greatly shorten your solar payback period.

## ▷ COMMERCIAL/AG RAPID DEPRECIATION

Also knows as the Modified Accelerated Cost-Recovery System (MACRS), this federal program allows companies to recover renewable investments through depreciation deductions with an additional 50% first year bonus depreciation for systems placed in service before January 1, 2018.

## ▷ RABE'S POWER PRODUCTION GUARANTEE

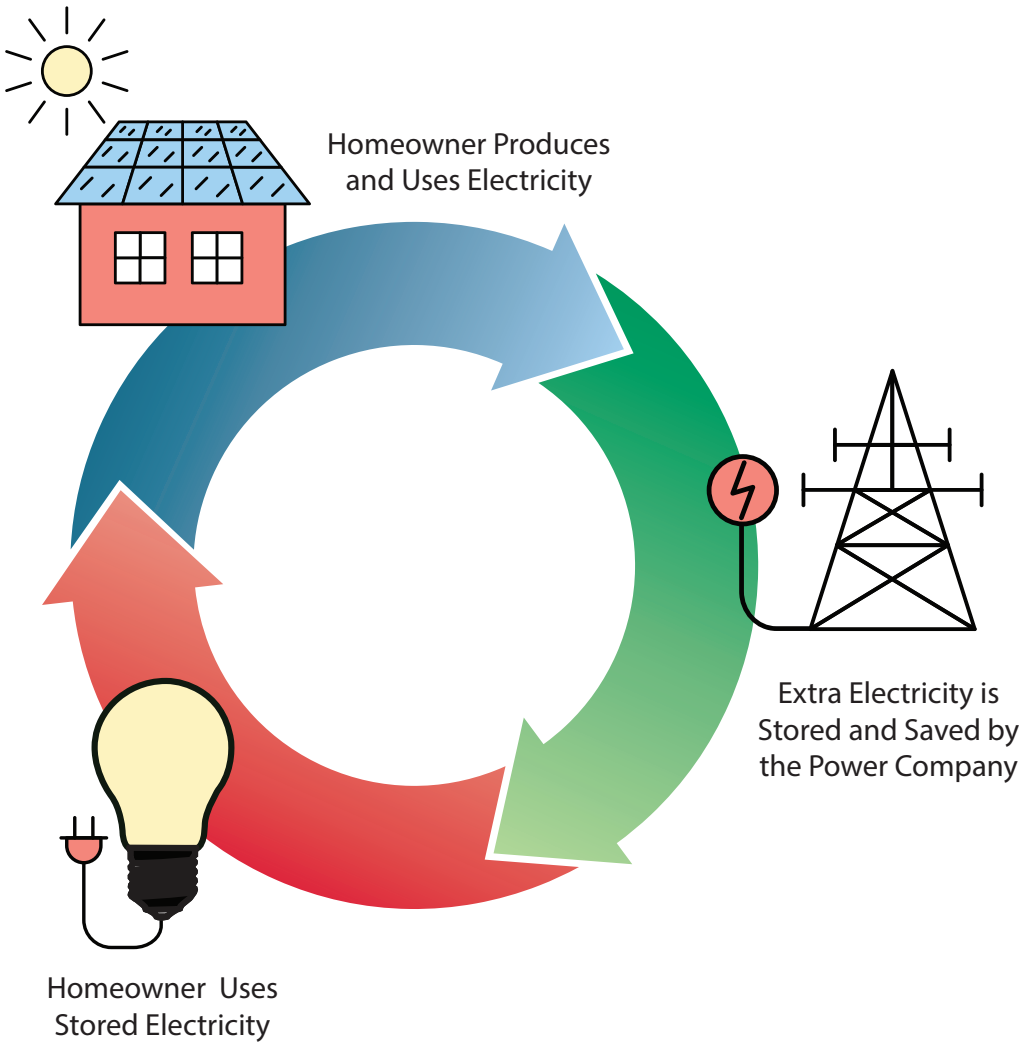
Rabe Hardware is the only Iowa solar provider that personally guarantees the power production of your PV solar system. If your system doesn't produce what we promise, we'll pay you the difference and install additional panels at no cost to ensure it meets the expected output.

# NET METERING EXPLAINED

**Here in the state of Iowa, homeowners with the option to take advantage of solar "Net Metering" policies see the highest rate of return on their solar investment.**

Net Metering allows consumers who generate some or all of their own electricity to use that electricity anytime, instead of just when it's generated. Because the home is connected to the electrical grid via poles and wires, electricity can flow both ways - from the grid to the residence and from the residence to the grid.

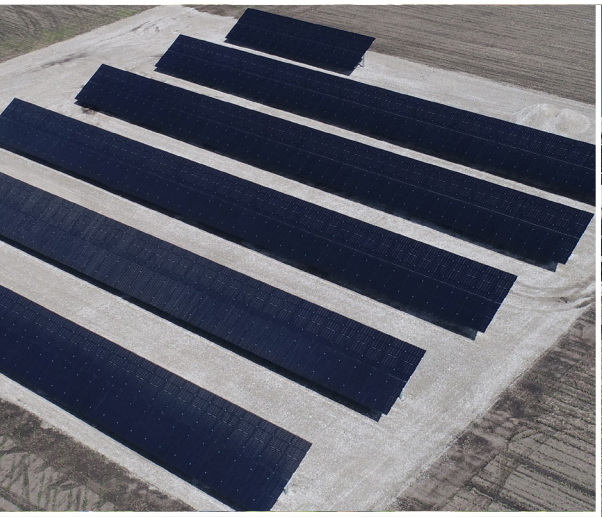
That means extra electricity that is produced by your solar system can be sent to the electric utility provider to help power neighbouring homes and businesses. In return, the electric utility offers a credit that can then be used at times when production is low, like when it's cloudy or rainy outside.




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