Paradise Energy Solutions
Save With Every Sunrise®

A FARMER'S GUIDE TO GOING SOLAR

What farms of all types need to know for a successful solar energy installation.

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THE BASICS

Solar is a pretty simple process. However, there are a few things you should know about how it can be installed and the regulations surrounding the electricity it generates.

GRID-TIED VS OFF-GRID SOLAR

There are two types of solar systems: those that are connected to the utility grid (grid-tied) and those that are independent (off-grid systems). Both have a time and a place, but nearly all farms install grid-tied systems.

GRID-TIED

- \+ If your farm has access to electric utility hookups, you can install a grid-tied system.
- \+ You'll never be without power as long as the grid is working. You'll pull energy from the grid at night or when the weather isn't favorable for solar.
- \+ You can, but don't have to, install batteries to store electricity.
- × Grid-tied systems won't produce electricity when the grid goes down. You'll need a storage system or a traditional generator.
- × You'll still be a utility customer, meaning you'll still see some (small) customer charges on a bill.

OFF-GRID

- × If your farm is remote and without access to grid electricity, you may have to go off-grid.
- × If your system stops producing and you run out of stored electricity, you'll have to go without.
- × You'll spend *a lot* of money for a battery system.
- \+ If the electricity grid goes down in your area, your system will continue to produce electricity and you won't be affected at all.
- \+ You won't be a utility customer, meaning you won't get an electricity bill.

THE VERDICT:

Grid-tied systems are better for farmers because installing a solar energy storage system large enough to meet your energy needs is far too cost-prohibitive. Farms can still offset 100% of their power needs with a grid-tied system for a fraction of the cost. Click below to learn more about grid-tied and off-grid solar.

LEARN MORE

Read More: Grid-Tied vs Off-Grid Solar

ROOF MOUNTS & GROUND MOUNTS

Solar panels can be installed on roofs or as free-standing structures on land. The installation that's best for your farm depends mostly on the area you have available, your preference, and your budget.

TYPE	PROS	CONS
ROOF MOUNTS 	• Optimizes unused space • Tends to cost less • Suitable for most roof styles • Most roofs maintain their warranty • No penetrations are required for ballast-mount & standing seam metal roofs	• May require roof penetration • Could require a new roof before installation • Future roof maintenance would be difficult • Adds weight to your roof
GROUND MOUNTS 	• Installation location is flexible; can be placed where there's a lot of sunshine or is out-of-the-way • May give you more space for a larger system • No roof penetrations needed • Easily accessible for maintenance • Can get ideal orientation and tilt for optimal solar production	• Installation costs may be higher • May take up farmable land • Easier access for unauthorized visitors • Plants growing underneath will require mowing & maintenance to control grass & plant growth

WORRIED ABOUT YOUR ROOF?

With a ground-mounted system, you may have to give up farmable land to install panels. But roof-mounted systems allow you to take advantage of otherwise unusable space.

But can your barn or poultry house's roof support the added weight of solar? In many cases, yes. **Before installation, an architect or structural engineer will evaluate the building to ensure it can support the panels.**

LEARN MORE

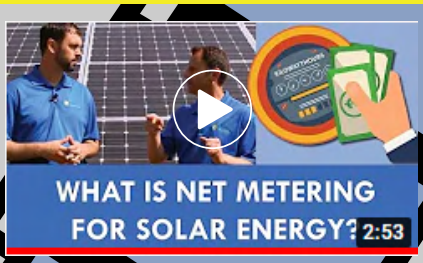
Read More: Roof Mounts vs Ground Mounts

NET METERING & AGGREGATE METERING

Net metering is, more or less, free energy storage via the utility grid. It's a billing mechanism that's pretty invaluable when it comes to your system's payback. If you have multiple utility meters, aggregate metering is also key.

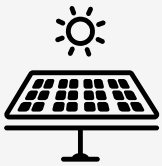
WHAT IS NET METERING?

Solar panels only produce electricity when the sun is shining, but you need electricity regardless of the weather. So what do you do when your solar system isn't producing? With net metering, you can draw electricity previously generated by your solar system off the grid for free.



Watch Video

1



Your system generates more energy than your farm is currently using. The extra electricity goes to the grid.

2

The utility then sells it. In return, they credit your account for each kWh uploaded.

3

When your system isn't producing, you can use those credits to power your farm for free.

METER AGGREGATION

If you have multiple electric meters, you may be eligible for aggregate metering, or virtual net metering. This lets you offset electricity usage on any meter or building with the power generated from a solar system connected to another meter. However, policies vary by utility and by state.

Watch Video

WHERE IS IT AVAILABLE?

Most states mandate that utilities provide net metering. Elsewhere, solar producers are compensated at the lesser wholesale rate, or by unique compensation methods, similar to New York's VDER Value Stack. Meter aggregation's availability also varies by utility and by state.

Joe Herzog had 4 electric meters on his farm. With virtual net metering, he can power all of them with one system.

Watch Case Study

SUN EXPOSURE: DO YOU GET ENOUGH?

Solar panels need sunlight to make power, and the more, the better. But there are some pretty common things that can stand between the sun and your panels, like trees, buildings, and weather.

SOURCES OF SHADE

Trees, buildings, hills, mountains, and even powerlines can reduce how much electricity your system produces. If these items cast a shadow on even just a part of your panel, that panel's output can be reduced by 33% to even 100%.

Before installation, your installer should do a shade assessment analysis with specialized tools to ensure shade won't interfere with your system's energy production.

Read More: Do You Get Enough Sun?

Watch Video

CLOUDS & RAIN

Climate also has an impact on your system's production. If your farm is located in a particularly cloudy or rainy area, solar panels will produce less energy.

However, solar has proven itself time and time again in the dreariest climates. The fix for this is to install a few extra panels to make up for lost production. It has a modest impact on costs but can have a huge impact on electricity savings.

Read More: Weather's Impact on Production

Even with cloudy weather in Upstate New York, Rodman Lott's farm system will reach payback in just 7 years.

Watch Case Study

WHAT ABOUT SNOW?

If snow accumulates on your panels, they will block out sun and reduce production. However, panels warm up quickly, and snow often melts or slides off your panels shortly after a storm.

With our Triple Ten production guarantee, you don't need to worry about snow or clouds. If your system production falls short, we will send you a check for the difference.

PRICING & PAYBACK

Greatly reducing your farm's expenses with free, clean energy makes solar sound pretty great. But how much is it going to cost?

The following pages will give you an idea. But it's not all about costs. We'll also show you how much money solar can *save* your farm.

HOW MUCH DOES SOLAR COST?

Solar is not a one-size-fits-all solution. Your system will be uniquely designed for your needs, goals, and budget. As a result, the cost will be determined by several factors. We can, however, give you a ballpark estimate.

FACTORS THAT IMPACT PRICE

Size
Larger systems cost more, but they can also save you more. The more free electricity the system generates, the faster the system will reach payback.

Equipment
From top-of-the-line to budget brands, there's a wide range of equipment available to suit every project.

Incentives
The federal tax credit and bonus depreciation are two widely available incentives. Some farms may have access to USDA REAP grants and more.

System Type
Roof mounts tend to cost less than ground mounts.

ROOF-MOUNTED SOLAR COSTS FOR FARMS

Grab your electric bill, find your monthly average, and use the chart below to find out what a system sized for your farm can cost.

Average Monthly Electric Bill	System Size (kW)	Total Cost Before Incentives	Cost After Incentives
$600	50 kW	$147,500	$70,565
$1,200	100 kW	$268,800	$128,595
$2,400	200 kW	$494,400	$236,523

LEARN MORE

Read More: How Much Does Solar Cost?

INCENTIVES & DEPRECIATION

Governments like when businesses install solar. That's why they offer so many cost-saving incentives that make the initial investment easier.

FEDERAL INVESTMENT TAX CREDIT

For systems under 1 MW, the federal investment tax credit is 30%. These projects can also increase to as much as 60–70% if projects qualify for adders. These adders are:

- 10% for a project built in an energy community
- 10% for meeting domestic content requirements
- 10-20% if installed in a low-income area

The 30% commercial solar tax credit is available through 2027, but the easiest path is to safe harbor or start construction by Dec. 31, 2025. Beginning in 2026, new FEOC rules will make qualifying much harder.

Learn more about the tax credit.

BONUS DEPRECIATION

Businesses can now capitalize on 100% bonus depreciation in year one on the federal level, followed by the standard five-year MACRS schedule on the state level.

SRECS

Solar Renewable Energy Credits (SRECS) are an extra way to earn money with solar. For each 1,000 kWh of energy you produce, you get one credit that can be sold. However, credit prices vary and they're only available in some states.

LOCAL INCENTIVES

Some states and utility companies offer additional incentives to businesses going solar. Check out our State Incentives page to see what your state offers.

USDA GRANTS

Businesses in rural areas may qualify for the USDA Reap grant. While these are highly competitive, they can cover 25-50% of your costs.

LEARN MORE ABOUT THE TAX CREDIT

HOW SRECS WORK

You get an SREC for each 1,000 kWh generated.

You sell those SRECs at market price.

The earnings go right to your pocket.

Learn more about the different cost-saving incentives available to farms on our blog.

Tax Credit | Depreciation | SRECs | State Incentives | USDA Grants

SOLAR OWNERSHIP VS LEASING

Solar ownership is when you pay for the project through cash or financing. Solar leases are when a second party pays for and installs the system on your land or building. In return, you purchase the electricity the system generates.

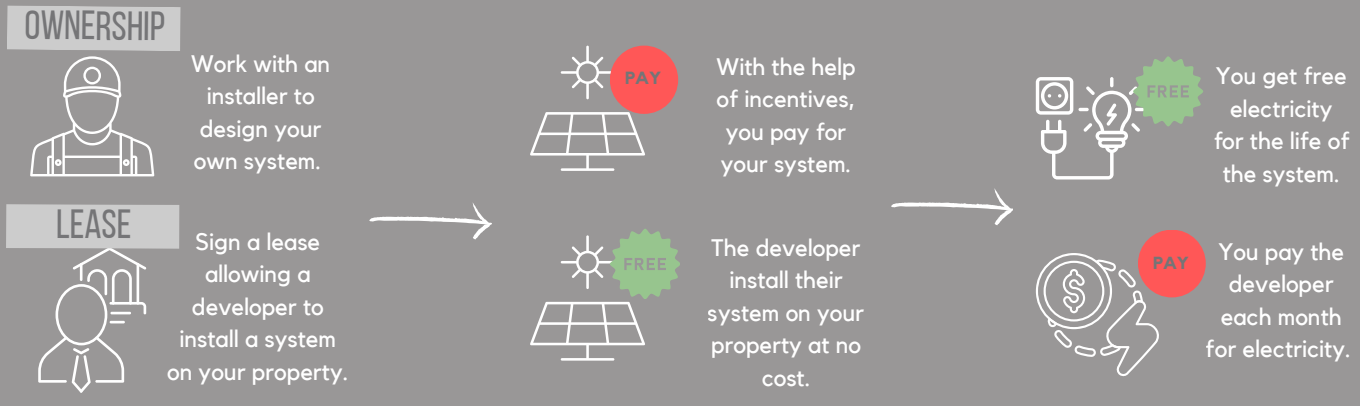
OWNERSHIP

- \+ You'll get all the incentives from going solar, like the 30% tax credit, bonus depreciation, and SRECs.
- \+ The electricity your system generates will be 100% free for you to use.
- \+ Your solar system will increase your property value.
- ✕ You'll have to pay for installation costs.
- ✕ You'll be responsible for maintenance.

LEASE

- ✕ The leasing company gets the tax credits and other incentives.
- ✕ You'll still have to pay a monthly electric bill. Plus, the lease agreement also has escalators that make the payment more expensive over time.
- ✕ Your lease will stay with your property, meaning if you sell, you'll have to find a buyer willing to assume your solar lease.
- \+ You won't have to pay for the initial upfront costs to install the system.
- \+ Your leasing company is responsible for maintenance, not you.

HOW IT WORKS

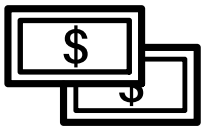


LEARN MORE

Read More: Ownership vs Leasing

SOLAR FINANCING

Solar systems, which can pay for themselves in just a few years, can be a valuable asset for any farm. However, they do require a substantial upfront investment. Here are a few common methods of financing.



CASH

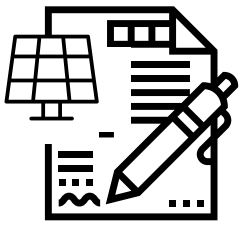
Cash is often the ideal way to pay for a solar system. It positions you as the owner and gives you 100% of the benefits from solar—from the electricity savings to the tax savings, and more—with no interest payments. However, not all farms have enough available capital to install solar, and that's okay. There are other options.

LOAN

You don't need to have cash on hand to reap the benefits of solar system ownership. Lending institutions recognize the power and stability of an investment in solar, and typically offer loans with great terms.

A similar option is a capital lease, which is different from a "solar lease." They provide the capital, and you'll still receive the benefits of ownership. Once it's paid off, you're the owner. They typically have shorter terms than conventional loans.

PPAS & LEASES



If you don't have the finances to own your own system, you can still go solar. Power Purchase Agreements (PPAs) and solar leases put solar on your property for no upfront costs. However, you won't be the owner of the system, and you won't get the tax benefits or free electricity. Instead, a leasing company will pay for and own the system. In exchange, you'll purchase the power generated by the system to power your farm. It typically starts out at a lower rate than your utility.

WHICH IS BEST FOR YOU?

It all comes down to your cash flow, credit, and tax liability. If you owe enough in taxes to take advantage of the 30% tax credit, and you have the money or credit to pursue ownership, that typically offers the best return. If not, leasing can be a great alternative.

Read More: Learn More About Solar Financing

ROI & PAYBACK

While price matters in any business-relate decision, the payback period and the return on that investment are also important. While these numbers will vary drastically based on your specific system, here's a little of what you can expect.

RETURN ON INVESTMENT

ROI is an important indicator of the success of an investment. For solar, the ROI is dependent on how much your system costs vs. how much your system is saving you. The lower your installation costs and the more you pay to power your farm, the better your ROI.

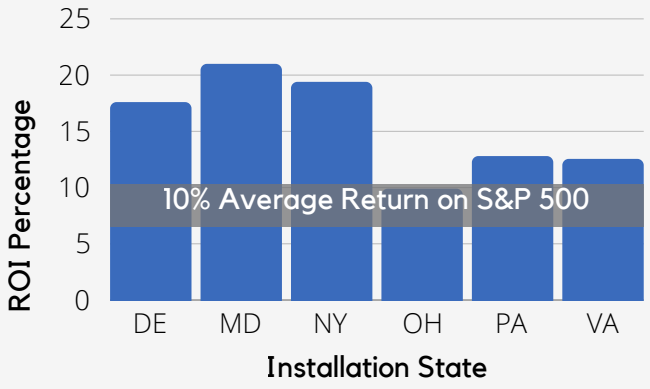
There are a lot of factors that go into this, and the number can vary greatly from farm to farm. However, it's fairly common for farms to see ROIs between 10% and 20%. The average return on the S&P 500 is 10%, which suggests solar is a pretty solid investment. It's also much less risky and volatile than the stock market.

PAYBACK PERIOD

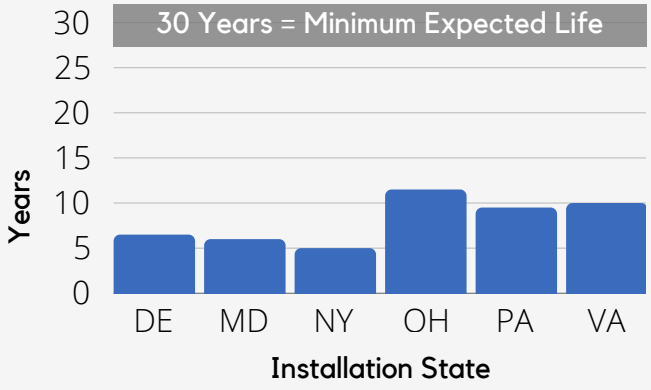
While solar costs money to install, it will eventually pay for itself, and then some. After just a few years of saving on electric bills, most commercial solar systems reach this payback number. That means every kWh produced after that is 100% free energy.

Paybacks will vary with installation costs, electricity rates, and how much your system produces. However, most farms pay off their system in under ten years. Most solar panels are guaranteed for at least 25 to 30 years, meaning you'll have 15 to 20 years of 100% free power.

AVERAGE ROI



AVERAGE PAYBACK



LEARN MORE

Watch: Schaefer-Landis Poultry Farm Case Study

MAINTENANCE

Solar panels are a fairly hands-off investment that requires little regular maintenance. However, there are still some instances where a professional may need to work on the system.

HOW OFTEN WILL THEY NEED MAINTENANCE?

Your solar panels likely won't need regular maintenance or upkeep.

Unless your solar PV system has bad parts, was installed incorrectly, or outside factors damage the system, little maintenance is needed. Leading inverter brands have warranties that cover the first 10 - 25 years. Solar panels from leading brands will be guaranteed for around 25 or 30 years. Even solar batteries come with warranties, though they are often much shorter than panels' and inverters'.

WHAT WILL MAINTENANCE COST?

With the right installer and equipment, little to nothing.

The true cost of a solar system repair can vary widely. But if you buy quality parts covered by warranties and you work with an installer willing to stand behind their work, you won't pay much. Manufacturer warranties cover components, and some installers offer workmanship warranties.

HOW DO I KNOW IF I NEED MAINTENANCE?

Keep an eye on your production monitoring software.

Most systems will come with an app or website that shows your system's production. If there is a drop in production unrelated to weather, it may be time for a service call. Here at Paradise Energy, we include average maintenance costs in the cash flows that come with our quotes. This will give you a clear picture of the impact maintenance could have on your system's payback.

HOW TO MAINTAIN YOUR OWN PANELS

Sit back, relax, and pay ridiculously low electric bills.

Cleaning dust and dirt off your panels can, in some instances, be worth it. However, regular rain showers do enough to keep most panels clean. And when it comes to snow, just about everyone in the industry recommends it's not worth clearing it off. Performing either of these tasks with the wrong equipment or approach could damage panels and void their warranty. Reach out to trusted professionals only. Ideally, the improved production should make up for the cost of hiring a professional.

HOW DO I AVOID EXPENSIVE MAINTENANCE BILLS?

Paradise Energy's Triple Ten Guarantee keeps your investment safe.

Going solar with Paradise Energy means your system will be protected by our Triple Ten Guarantee. This is above and beyond your equipment warranty. It guarantees your system's production, comes with expert system monitoring, and protects you against any workmanship issues for ten years.

Triple Ten Guarantee
Every Investment Should Be This Safe!

LEARN MORE

Read More: Learn more about the added security of our Triple Ten Guarantee

INVESTING IN SOLAR VS OTHER EQUIPMENT

If you're looking to invest, you want a quick payback and a large return with little time or effort from you. Let's take a look at how investing in solar compares to another investment, like a piece of machinery for your farm.

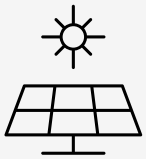
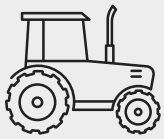
THE COST BREAKDOWN

Modern farm machinery has the ability to make your work more efficient, allowing you to get more done in less time. And sometimes, it's just a necessity to keep your farm running.

However, investing in a solar system may give you a better return than a new tractor. Thanks to cost-saving government incentives, there are more tax benefits with an investment in solar. Additionally, you'll be able to take advantage of free electricity for 25 to 30 or more years.

Take a look at how the financials compare to an investment in both solar and equipment. If your machinery can last you a few more years, you may be better off going solar. The financial return of a solar investment is front-loaded. Between the taxes you'll save in the first year and your reduced electric bills, going solar first will free up the capital your farm needs to invest in other equipment.

THE COST BREAKDOWN

Investment	Purchase Price	Tax Benefits	Total Cost	Ongoing Costs
 50 kW Solar System	$147,500	$80,697 (30% tax credit & depreciation for a 25% tax rate)	$96,303	Insurance & Possible Repairs Years Down the Road
 Tractor	$150,000	$33,000 (depreciation for a 22% tax rate)	$117,000	Insurance, Regular Maintenance, Repairs, & Labor

SAVING WITH SOLAR

To achieve the same tax savings with an equipment investment, you'd need to spend $254,632, which is $107,132 more than a 50 kW solar system.

ON THE FARM

With the basics out of the way, we can get into some of solar's agricultural-specific benefits and considerations, like its impact on your crops, animals, and land.

SOLAR'S IMPACT ON FARMLAND

Whether you raise livestock or grow acres and acres of crops, the success of your farm depends on wide-open fields of fertile soil. Though installing solar may give your farm a financial edge, how will it effect the earth around it?

HOW MUCH LAND WILL SOLAR PANELS TAKE UP?

Absolutely none to a few acres, depending on your system.

If you install a roof-mounted solar system, your solar panels won't take up any land. If you install a ground-mounted system, the amount of land it covers depends on your system's size. A system sized to offset the electricity your farm uses likely won't take up more than half an acre.

For example, a solar system that will cover a $1,200/month electricity bill (that's about a 100 kW system) takes up roughly 8,500 square feet, or a fifth of an acre. That system would save you about $14,400 each year on energy costs. Can you make more money farming that same bit of land?

WILL SOLAR PANELS CONTAMINATE MY SOIL?

Solar panels will not contaminate your soil in the short or long term.

Most solar panels, and all those that Paradise Energy installs, are made from silicon. Silicon is the second-most abundant element in Earth's crust. It plays a natural role in the growth of plants and it will not harm your land.

The metal frames and posts used to hold ground-mount systems are made mostly of aluminum. While aluminum can harm crops, only a minute amount is released into the soil from posts. Over several decades, there is no evidence suggesting it has any negative impacts on the earth. In fact, many farmers have successfully grown crops directly under and around solar arrays.

CAN THE LAND BE FARMED ONCE THE PANELS ARE UNINSTALLED?

Yes, the land can be returned to agricultural use.

Most solar panels are guaranteed for about 25 to 30 years. While they can produce electricity long after their warranties, you can expect that your system will last at least this long. Once it's time to uninstall the system, you can either replace your panels or once again farm that area.

LEARN MORE

Read More: Solar's Impact on Farms

GROWING CROPS NEAR SOLAR PANELS

Solar panels on crop farms can be especially beneficial. Depending on the height of the ground mounts you install, a variety of vegetation can still be planted underneath the panels.

CREATES A PARTIALLY-SHADED & TEMPERATE AREA

Solar panels won't heat up and dry out crops underneath or around the array. In fact, they actually keep things more temperate for nearby crops. This can extend growing seasons. They can also create an ideal growing environment for growing shade-resistant crops, and with less sun exposure, they won't require as much water.

CAN BE USED TO ATTRACT POLLINATORS

You can also use this area to plant native vegetation, creating a haven for pollinating insects. You'll be creating a safe haven for these important bees and butterflies, and in return, they can then help pollinate your nearby crops.

IMPROVED PANEL EFFICIENCY

Whether a low-maintenance grass or high-yield crop, vegetation under your panels can improve efficiency. They'll help keep the temperature around the panels lower, which leads to more efficient panels.

However, if this vegetation gets too tall, it can have the opposite effect. If the plants below grow high enough to cast shade on the solar panels, it can negatively impact your electricity production.

POULTRY, LIVESTOCK & SOLAR PANELS

If you raise livestock or poultry, you may be wondering if it's safe for domesticated animals to go near or under the ground-mounted solar system. In some cases, yes. In others, you're better off restricting access.

IS SOLAR ENERGY DANGEROUS TO ANIMALS?

Solar panels don't pose any immediate outright danger to animals. There is no harmful radiation or chemicals emitted. However, curious animals can chew on wires, exposing them to the threat of electric shock.

GOING HIGHER

A ground mount's average two-foot clearance may not allow enough room for animals underneath the panels. If you would like to allow your livestock to graze near the system, you could increase the clearance to four feet. This should leave room for calmer and smaller animals.

WHICH ANIMALS SHOULD GRAZE NEAR SOLAR PANELS?

Cattle

Larger animals, such as cattle, could harm panels by bumping into and brushing against them.

Goats

Rowdier animals, like goats, can damage panels by jumping on top of them.

Sheep

Calmer animals like sheep can graze around the panels, keeping vegetation controlled.

Poultry

Small animals like poultry can graze around the panels, and also benefit from the panels' shade.

LEARN MORE

Learn how one poultry farm uses solar for two purposes — free energy and extending the amount of time their chickens can spend outside.

Read More: Case Study

THE INSTALL PROCESS

Installing a solar system should be a fairly hands-off and easy process that won't slow things down on your farm. Your installer will take care of all the heavy lifting.

Here's more on what to expect, how to find the right team to work with, and how to evaluate your proposals.

6 STEPS TO FREE ENERGY

No farmer needs another complex task added to their day-to-day schedule. Thankfully, installing a solar system is relatively hands-off and can be completed in six simple steps.

1

Custom Evaluation
You'll meet with a consultant to discuss your questions and energy goals.

2

Detailed Quote
After 2-3 days, you'll receive a quote detailing costs, ROI, & payback.

3

Signed Contract
If you decide to move forward, you'll sign a contract & discuss the nuts & bolts, preparing for construction.

4

Paperwork & Permits
We'll finalize the details & take care of all the paperwork, permits, & materials.

5

Construction Begins
The project will proceed with little to no disruptions to your farm, & we'll keep you updated on everything.

6

Free Electricity
Once your project is completed in a few days or weeks (depending on size) you'll start generating free electricity!

LEARN MORE

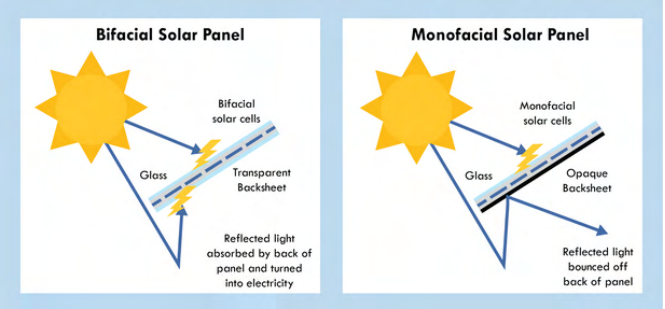
Watch: Sizing a Solar System

CHOOSING THE RIGHT PANELS

There are a few different options when it comes to solar panels. Some of these options are strictly aesthetic, and some will determine performance.

MONOFACIAL VS BIFACIAL PANELS

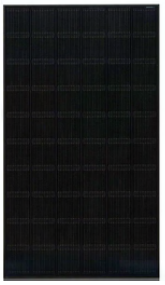
These are the two main types of solar panels. Monofacial panels produce from the top side of the panel only. These are great for roof mounts or on a surface with low albedo. Bifacial solar panels have energy-producing solar cells on both sides of the panel. These are great for ground mounts or tilted roof mounts with a reflective surface underneath.



BACKSHEET & FRAME COLOR

Most panels come with a white backsheet and silver frame. However, some brands offer models with black backsheets and black frames. The latter option tends to be more expensive but can blend into dark roofs more easily, giving it an aesthetic edge.

White Backsheet



Black Backsheet

PANEL SIZE

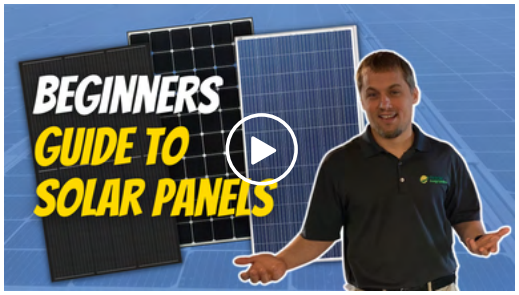
Solar panels come in two different sizes: 60-cell and 72-cell. Overall, 72-cells tend to be more economical, as they'll generate more electricity per panel. This makes them the preferred option for many agricultural solar systems.

72-Cell Panel

60-Cell Panel

OUTPUT RATING & EFFICIENCY

The output rating represents how many watts of electricity the panel can generate. Higher wattages mean more electricity, but this comes at a higher cost. Efficiency is the percentage of electricity it produces with the energy it receives. More efficient panels produce more electricity but are also more expensive.



LEARN MORE

Read More: Picking the Best Solar Panels

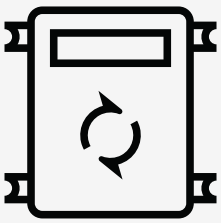
PICKING THE RIGHT INVERTER

The main difference between inverters is the level on which they convert power. Some do so in groups of panels called strings, and others convert power on a panel-by-panel basis. There are pros and cons to all types of inverter.

STRING-LEVEL VS MODULE-LEVEL CONVERSION

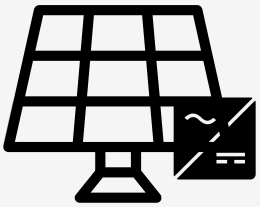
String inverters operate on a string or grouping of several solar panels. Each solar panel in a string can only produce as much electricity as the lowest-producing panel in that string. Microinverters and optimizers, however, work on a module-by-module basis, meaning the output of one panel won't impact the output of another. While these are more efficient, they will cost more.

1



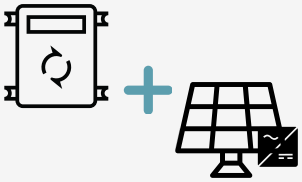
String Inverters
These are often the most common and cost-effective option. However, they're not the most efficient. Each panel will only provide as much electricity as the lowest-producing panel in that string.

2



Microinverters
Microinverters are installed on each solar panel and allow them to produce their maximum amount of electricity, unaffected by others. However, they do tend to be more expensive.

3



String Inverters + Optimizers
This combination gives you the ease of string inverters and module-level optimization. String inverters are installed, but optimizers will be installed on each panel to allow for panel-level optimization.

WHICH IS BEST FOR YOU?

String inverters are typically more economic and are better for projects of scale. However, module-level optimization improves efficiency, especially if your system will be shaded.

Read More: What's the Best Inverter Type?

HOW TO PICK THE RIGHT INSTALLER

Finding the right solar installer is essential. A solar system is a 30+ year investment, and it's important to find a company that will partner with you, stand behind their work, and be around to honor any warranties.

Reviews

You can learn a lot about a company from their customers. Look at reviews on Google and Facebook. Ask the company for references. Look to others for recommendations. This gives you a glimpse at how the company treats customers and handles challenges.

Experience & Longevity

You want to partner with a company that has a history of quality and reliability. Spend time researching past projects. Make sure they're certified by leading solar industry organizations. NABCEP is the leading certifying organization and SEI provides excellent training for solar professionals.

The Team

Ask who would be working on your project. Full-service solar installers have in-house team members that complete every step of the project. Other companies use subcontractors. These people may not have the certifications and experience that a full-service solar installer will have. Meet the team at Paradise Energy Solutions.

Company Values

The values and mission statement give you a glimpse into the DNA of a business and offer a gauge of how you'll be treated as a customer. Find a company that has a vision that aligns with your values.

Warranties

Many panels come with 25- or 30-year warranties. Inverters come with warranties that range from 10 - 25 years, depending on the make and manufacturer. Look for an installer that goes above and beyond the manufacturers' warranties to guarantee their work and the energy production of the system. These warranties are important for protecting and providing predictability for your investment.

LEARN MORE

Read More: Choosing the Right Installer

EVALUATING A SOLAR PROPOSAL

Don't let the complexity of solar system estimates overwhelm you. Understanding these 10 items when reviewing and comparing your proposals will help you make the best decision when it comes to your solar installer.

Size & Location
A system's size is based on your energy consumption and the number of panels required to meet your energy demands. It should also be clear where the installer intends to place the system.

Components & Equipment
A list of components should include the quantity, brand, and watts of the solar panels; the quantity, and brand of the inverters; and in some cases, the quantity and brand of the optimizers.

Cost & Incentives
Your proposal should have a cost and incentive summary, including the total cost of the system, savings incentives, and the net cost of the system. You should also see the long-term cash flow.

Environmental Impact
Your proposal should include the expected amount of your energy the system will offset, along with its environmental impact.

Payment Terms
The payment terms should be clearly defined in the proposal.

Warranties & Guarantees
Most solar proposals will include two types of warranties: manufacturer warranties for equipment, and warranties from the installer.

Project's Scope
The proposal should detail what is included and what isn't, as well as provisions for any unforeseen costs.

Project's Schedule
Make sure the proposal includes a schedule that details the process, with dates, from the time you sign to the time the system is energized.

Electric Rate Inflation
Most solar proposals will show you your electric savings. The challenge, however, is predicting the cost of electricity in the future. Many installers include an escalator reflecting energy cost inflation.

Investment Analysis
You should see a long-term, cumulative cash flow analysis. Unlike other investments, solar has a rapid return in the early on and tailors off at the end of the payback period, making it an attractive investment.

LEARN MORE

Read More: Evaluating a Solar Proposal

QUICK SOLAR REFERENCES

Sometimes we need only the vital information, and we need it fast.

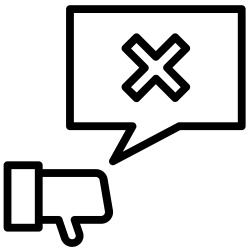
This section distills essential solar information down to just two pages.

THE PROS & CONS OF SOLAR

There's good and bad to just about everything. Before making a decision, it's important to be aware of both sides. That way, you can be sure you're doing what's right for your farm today and well into the future.

PROS

- Reduces your farm's operating costs by eliminating your monthly energy expenses.
- Protects your finances against rising electricity rates and future-proofs your farm for the next generation.
- Saves money on taxes and allows you to recover a large portion of installation costs in the first year.
- Solar saves you money with little or no regular maintenance or inputs from you.
- Your farm is going green by switching to an emissions-free energy source.



CONS

- Unless you invest in energy storage, you will loose power along with other utility customers when the grid goes down.
- Installing a solar system requires upfront capital or access to financing in order to save money long-term.
- Your system won't produce electricity unless the sun is shining. You'll need to use net metering credits or purchase energy from the grid when this happens.
- Ground-mounted panels may take up some of your farmable land.

LEARN MORE

Read More: Solar's Pros & Cons

8 SOLAR TERMS YOU NEED TO KNOW

Throughout your research, you may come across a few unfamiliar terms. The following pages have easy-to-understand definitions of some common jargon to help you along your way.

SOLAR MODULE

The more common name for a solar module is "solar panel." When solar panels are connected to a roof, this creates a solar array, more commonly called a solar system.

PHOTOVOLTAICS

You may hear the word photovoltaic or PV when someone is discussing solar energy. Photovoltaics translates to 'light electricity' and is the method of creating electricity from solar (sun) radiation through the use of solar modules.

INVERTER

Solar panels generate direct current (DC) electricity with energy from the sun. However, our devices and equipment mostly use alternating current (AC) electricity. Inverters take the DC electricity generated from the panels and turn it into AC electricity.

NET METERING

Net metering is the agreement between a utility and a solar-producing consumer that allows the consumer to buy and sell electrical credits as needed. If the solar system produces more than the house is using, the energy is transferred to the utility by means of an electrical credit. If it is not producing, electricity can be drawn from the grid by spending a credit.

KILOWATT (KW)

This is the rate at which power is used or produced. Solar arrays are rated in kilowatts, which is the amount of electrical power that would be produced at any specific point in time at standard test conditions (STC).

KILOWATT-HOUR (KWH)

The volume of power that is used or produced. One kWh is the amount of energy a 1,000 W item would use (or produce) if it ran for 1 hour continuously.

INTERCONNECTION

The interconnection is the physical connection between the electrical grid and your solar array. It's most often achieved with wires that nearly attach to your system and run underground to the utility connection.

SOLAR MODULE DEGRADATION

Over many years, the performance of solar panels begins to degrade, causing them to be less efficient. This degradation is caused by exposure to the elements and normal wear on the solar panel. Panel degradation is to be expected with solar modules. Each manufacturer specifies the expected degradation and warranties of the panels based on these degradation expectations.

WANT TO REDUCE OVERHEAD, SAVE ON TAXES, AND GO GREEN?

Stop overpaying for your energy and start powering your farm with cost-free and emission-free electricity. Request your free custom solar quote to learn exactly how a solar energy investment will boost your farm and its bottom line.

Request your free custom quote

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