

# Solar for the Middle –

## A No-Nonsense Guide to Solar for Mid-Size Companies



**Safari Energy**  
A PPL Company

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Safari Energy project in Connecticut



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## A Message from Safari Energy

You may think commercial solar is only for large, Fortune 500 companies with enough resources to afford millions of dollars in capital expenditures. The good news is that this is not at all the case. Middle-market companies can also benefit from solar and are increasingly expected to do so by large companies seeking to reduce the environmental impact of their supply chains.

Mid-scale companies not only stand to better position themselves with their customers, but also drive significant savings or tax benefits by going solar. Many have done so already – the amount of solar capacity installed across the United States has grown tenfold in the past decade, and some people are already calling the 2020s “the solar decade.”

With solar build costs at historic lows, now is the right time for middle-market companies to identify a trusted partner to address any concerns and to navigate the complexities for you.

In this guide, you will learn about the pros and cons of solar energy for middle-market companies and the ways to recognize your property’s potential, evaluate partners, and present your project as a prudent business decision.

### Who is this guide for?

This guide has been designed for middle-market companies that:

- Own large, flat, unencumbered rooftops or parking areas
- Have significant energy use
- Face high electricity rates

You should read this guide if you are a:

- C-suite executive
- Sustainability director
- Operations officer
- Property manager



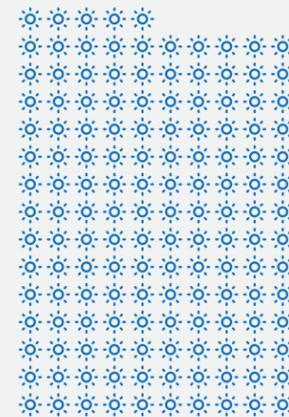
## Commercial Solar in the United States Today

According to the article [US Commercial Solar Presents Massive Opportunity](#), there continues to be a substantial opportunity for commercial solar installations in the United States:

1. Approximately 4.5% of commercial buildings have solar panels installed or use community solar for their power.
2. 75% of businesses use enough electricity to support a PV solar system.
3. Therefore, roughly 70% of commercial buildings in the U.S. can benefit from solar energy. This equates to about 600,000 existing structures.
4. If all those buildings went solar, approximately 145 GW of solar capacity would be added from the commercial sector alone.

Ultimately, what these numbers tell us is that in the coming decade, there is enormous potential for commercial businesses to adopt solar energy in the U.S.

There's 145 GW of solar capacity still available in commercial solar – that's 290 times the nation's largest operating utility scale solar project<sup>1</sup>



Capacity Available in Commercial Solar



Nation's Largest Operating Utility-Scale Project



Only 3.5% of commercial buildings have solar panels already installed

Supply Chain



Company Operations



Supply chains contain an average of 5.5 times the emissions of a company's own operations<sup>2</sup>



Roughly 70% of commercial buildings in the US can benefit from solar energy - about 600,000 existing structures

<sup>1</sup> <https://www.forbes.com/sites/woodmackenzie/2020/08/04/us-commercial-solar-presents-massive-opportunity/?sh=4341e09c35d8>

<sup>2</sup> <https://www.forbes.com/sites/mikescott/2019/02/11/companies-look-to-supply-chains-for-sustainability-gains/?sh=2c2b1c81c558>

## Why Commercial Solar?

It is no secret that solar power can reduce electricity costs. It can also often be structured for no up-front cost to the end-user. There are many compelling reasons to go solar, and just about every solar developer in the country will pitch these angles. While it is true that solar power can help businesses save on costs, there are many other reasons to go solar.

Let's look at some other motivators that middle-market companies are evaluating to support their solar investments:

### Incentive Program Availability

There is a wide array of solar incentives available across the country that are highly dependent on a variety of factors. One of the most important drivers of today's incentives is a state's Renewable Portfolio Standards (RPS).

Many states have declared RPS goals to have 50% of the state's power generated from renewable energy sources by 2030 or 100% by 2050. Middle-market businesses should keep tabs on these sustainability goals as they are major drivers to make solar attractive in a market.

If your state has adopted a new RPS goal, it may be a good time to contact solar developers who monitor these programs closely to determine the availability of new incentive programs. These can include the ability to sell excess energy back to the grid (Net Metering) or to trade renewable energy certificates (RECs).

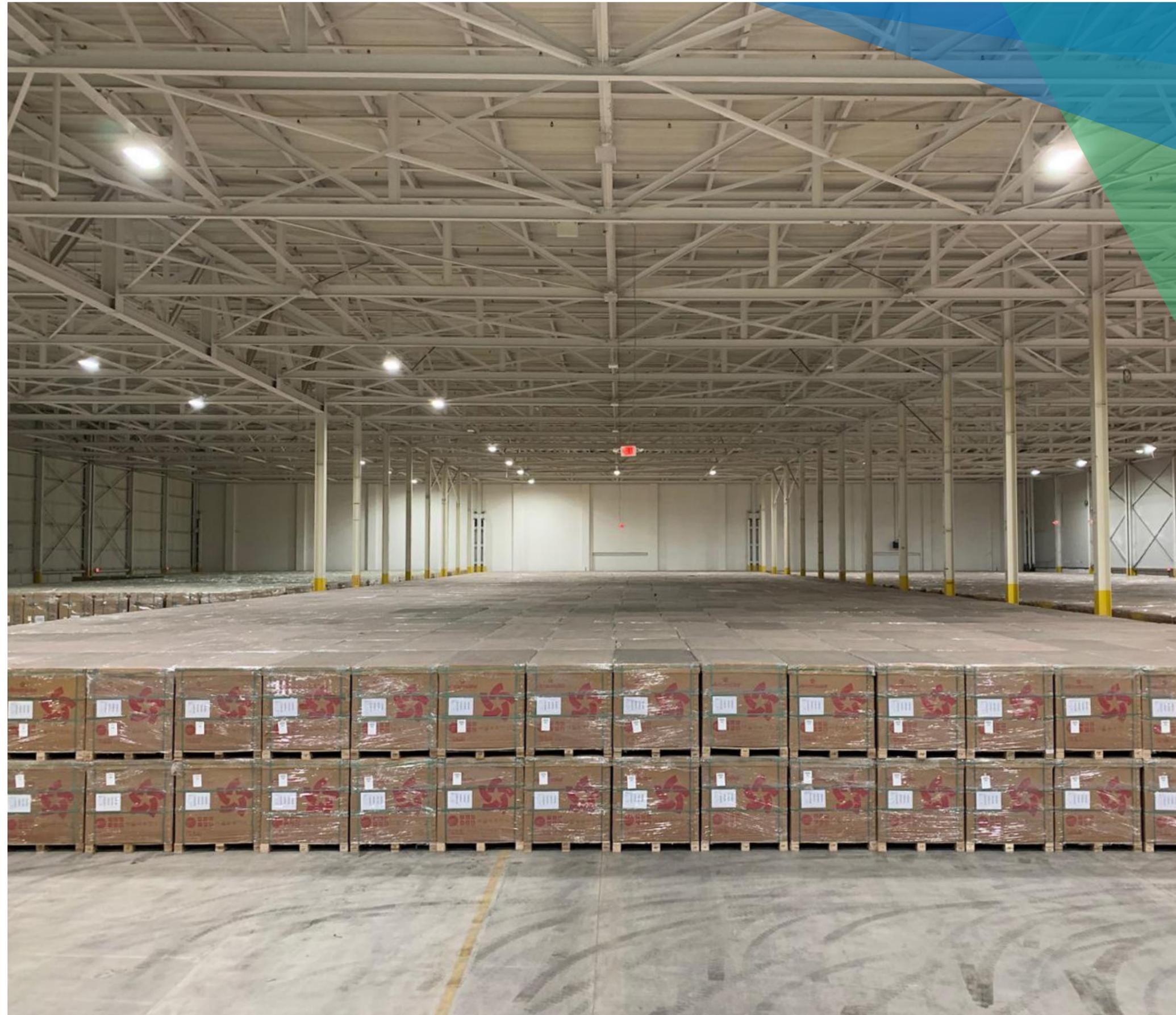
Beyond state legislation, there is also the [Federal Solar Investment Tax Credit \(ITC\)](#), which can account for 22% of a solar system's total installation costs in 2021. This credit is set to decline to 10% in 2022 and is slated to remain at that level for businesses going solar in the future.

Some solar developers have access to "safe harbored" equipment that can help qualify for higher tax credits, up to 30%. Businesses can also benefit from incentives such as accelerated depreciation of solar equipment, bonus credits for developments on existing structures (as opposed to open land), and for adding battery storage to a solar array. Skilled developers will help a business ensure they are taking full advantage of all the available programs.

### What is "safe harbored" equipment?

A legal provision in the solar ITC allows for commercial businesses to maximize their investment tax credit through a process known as "safe harbor." With safe harbor, property owners can lock in the investment tax credit percentage for the year a solar project is started, rather than when it has been completed.

Finally, over 35 states have property assessed clean energy (PACE) programs available to help finance renewable installations. Many middle market companies may be eligible for Commercial PACE (C-PACE) programs that provide an attractive financing alternative tied to the building in the form of a tax lien rather than an obligation of the borrower.



Some of Safari Energy's safe harbored solar panels



## Environmental, Social, Governance (ESG) Goals

A recent CDP study, [Cascading commitments: Driving upstream action through supply chain engagement](#), found that, on average, a major corporation's supply chain is likely to have 5.5 times more carbon emissions than the rest of the company's normal operations. This makes supply chain companies the target of corporate Environmental, Social, and Governance (ESG) efforts. Middle market companies with sustainability programs have an advantage over those who lack such programs when negotiating with procurement officers and corporate buyers from large corporations that are putting a premium on ESG ratings.

Solar power is an ideal ESG solution for middle-market companies.

- First, solar is now the [cheapest way to build new electricity generation](#) in history, making it a very cost-effective way to implement ESG initiatives.
- Second, solar projects are relatively straightforward to implement. Solar energy installations do not require behavioral changes within an organization, unlike some other ESG initiatives such as asking staff to recycle or turn off computer monitors.
- Lastly, installing a solar array has an immediate impact on ESG goals. Other ESG initiatives might have less-tangible results (for example, issuing a sustainability report or joining advocacy groups). Combined, these factors make solar cheaper, faster, and more tangible than other solutions.

## Commercial Solar as a Long-Term Asset with Stable Returns

Rates for conventional electricity from the grid fluctuate throughout the day, and typically trend upwards over time. This makes it difficult for businesses to make long-term plans involving the cost of power, a major expense for many mid-size companies. Utilities also often impose time of use charges, making certain times of day much more expensive to use electricity from the grid.

By contrast, if you own a solar installation, your electricity is free. And even if you don't own the solar panels generating your electricity, you will still likely realize significant savings.

In the latter case, if a third party owns the solar system on your building's roof, you will receive electricity through a Power Purchase Agreement (PPA) that typically includes a set rate schedule for 20-30 years. These rates are generally offered at a discount to utility rates, which, as mentioned, tend to increase over time.

In both scenarios, middle-market businesses using solar energy get a long-term, predictable, discounted electricity rate.

## The Case Against Commercial Solar

Although this may seem counterintuitive for a solar developer to highlight the risks of going solar, we feel that it is very important to address, as they are often downplayed. Commercial solar can be a complicated industry with hard-to-foresee challenges but navigating them is easier with knowledgeable partners who are willing to address them head-on.

Of course, commercial solar does not work for everyone. For example, if your company is currently leasing their building space, there is the extra hurdle of convincing the property owners to install a solar energy system on your behalf. Some landlord-tenant relationships may be particularly sensitive, or the owner may not see the value. In these cases, a solar developer could step in as an experienced third-party and propose solar on your behalf.

Cost is a common concern for many mid-scale businesses looking into solar. While large corporations may be able to afford the significant capital expenditures, this is simply unrealistic for many middle-market companies. To mitigate this, many solar developers with enterprise relationships can offer flexible deal structures including Power Purchase Agreements (PPAs). In this arrangement, the building owner (or “host”) does not pay for the system or related installation costs. Instead, the host buys power from the solar developer at a fixed rate that is generally below the host’s existing rate. The solar developer then receives the tax credits and other incentives.

Solar might be a non-starter if your building uses too much or too little energy. Some self-storage facilities, for example, do not use enough electricity to make solar worthwhile for a return on investment and may be in a state that does not allow for net metering (selling excess energy produced back to the grid).

Finally, there are sometimes concerns about the physical impact of a solar panel system on a building. Some might worry that the racking system will drill holes in the roof, void the roof’s warranty and cause leaks. Experienced developers with a strong track records will put safety and reliability first when hiring subcontractors – ensuring proper precautions are in place to protect workers and property. For retail properties, aesthetics are also typically taken into consideration, such as the line of sight from surrounding areas and even matching the existing roof color.





Safari Energy solar parking lot canopy

## How to Evaluate A Building for Solar in 10 Minutes or Less

A full analysis would take much longer than 10 minutes, but middle-market companies often do not have the resources to deploy a team of engineers and consultants to perform the evaluation. If your business is interested in solar, it is possible to make your own preliminary evaluation to understand the basic financial premise. If in doubt, reputable solar developers will offer a no-cost financial solar analysis.

Below are a few key steps you can take to determine if solar energy makes sense for your business.

### Review Site Characteristics

First and foremost, you will want to review your building or property for some key features. A large, flat, unobstructed roof, open land, or parking areas are typical starting points where solar panels can be considered. Each of these locations has its advantages, disadvantages, costs, and considerations.

**Rooftop solar arrays** - Middle-market companies often operate in large buildings with flat roofs. This is ideal for solar, as it avoids the need for complicated clamping or worse, drilling, into the roof, as might be required for typical residential projects. These rooftops are often underutilized, and solar panels can transform them into a cost-saving asset.

As most buildings have easy roof access, this also makes rooftop solar arrays easy to monitor, clean, or repair if necessary.

Safari Energy rooftop solar panels



These systems are also built to maintain RTU (rooftop unit) access, setbacks from ledges, and code compliance.

**Parking canopy arrays** - Parking lot solar canopies have been an increasingly attractive option for middle-market companies. With solar panels raised above the existing parking areas, installations can generate electricity while providing shade and protection from the elements and UV rays for employee and customer vehicles. These systems are designed so they do not impact the flow of traffic and parking capacity and can even be added atop existing structures. Solar parking canopies can also incorporate lighting for enhanced safety or electric vehicle charging stations for an additional green component.

**Ground-mounted arrays** - Occasionally, factory roofs are encumbered with vents, skylights, and other features that prevent optimal system design. In cases like this, companies with large properties often install solar arrays in protected, fenced areas near the building.

As trenching, extra wiring and environmental impact studies may be necessary, ground-mounted arrays are generally more expensive than rooftop solar panels upfront. However, a ground-mounted solar array may be the only option if the roof of the building or parking lot is not large enough to design the desired system or does not receive enough daily sunlight due to shading from trees or other structures.

Safari Energy ground-mounted solar panels



## Energy Usage

The exact number of solar panels to install depends on your building's energy usage. Whenever possible, solar arrays are sized to accommodate a business' annual electricity use. Before meeting with solar developers, company representatives will often ask you to compile the past year's electric utility bills, measured in kilowatt-hours (kWh).

In areas with net metering, systems can be designed to produce more electricity than is needed onsite. Excess power can be sold back to the grid with the owner of the system receiving payment from the utility. This option is only available when your utility offers such a program.

## Electricity Rate

Commercial electricity rates are often lower than retail electricity rates, however, this should not stop business owners from exploring solar.

Conventional electricity rates are never fixed. Utility rates vary and tend to increase over time. There are also systems in place that increase rates during peak hours of the day or by season. In nearly all cases, solar panels can provide predictable and lower kWh rates throughout their lifetime.

Solar systems with added battery storage capacity can also be utilized for strategic load shifting and to reduce peak capacity payments. With smart software in place, self-produced power can be deployed from the battery during the evening or whenever electricity rates are high.

## Available Incentives

Lastly, the cost to go solar can be dramatically reduced by incentives available for your business. While there is an ongoing federal solar investment tax credit (ITC), many states and local municipalities offer other additional incentives and rebates to support the development of renewable energy systems. There may even be incentives offered by local electric utilities. A quality solar developer will be intimately familiar with what is available in your market and the necessary qualifications.



Safari Energy project in Massachusetts



Safari Energy project in California

## How to Evaluate Solar Partners

Deciding whether to go solar should be relatively easy, but getting the project up and running is more involved. Evaluating a partner for every step of the process should be carefully considered, as solar installations are long-term energy investments.

There are multiple approaches to identifying the right solar partner. Large corporations and government entities often turn to a tendering or Request for Proposal (RFP) process. This might even be a requirement for some organizations with strict oversight or regulatory concerns.

We'll explore some of the drawbacks to this costly and time-consuming process, and detail what you should look for in a solar developer without necessarily relying on an RFP process.

### Look for Accreditation

Although requirements vary from state to state, most reputable solar companies should have some form of accreditation to ensure their staff is qualified for PV installations. Today, [roughly a dozen states across the country](#) have licensing requirements for solar companies to legally operate within the state borders.

To be fully licensed, states look for a variety of certifications and experiences. Most commonly, licenses are provided to companies with staff members that have at least one of the following:

- A North American Board of Certified Energy Practitioners (NABCEP) PV Installation Professional Certification
- Proven completion of programs from the Interstate Renewable Energy Council (IREC) or Institute for Sustainable Power Quality (ISPQ)
- Successful completion of a specific PV manufacturer's training program
- A completed apprentice program provided under the National Electrical Contractors Association (NECA) or the International Brotherhood of Electrical Workers (IBEW)

Skilled solar developers maintain extensive networks of certified and reliable installers. Even if you live in an area where it is not legally required, it is almost always recommended to work with a NABCEP certified solar professional, and a solar developer can give you the peace of mind that all the proper documentation is in place.



### Check for Testimonials or Case Studies

Like with most decisions, a company's reputation should be scrutinized before choosing to work with a specific solar developer. Here, it is important to check the company's website for any customer testimonials or case studies. Beyond this, there may be additional information available on review sites such as Google, Yelp, and the Better Business Bureau. Offline, personal referrals can be one of the most effective ways to get to know a company before investing in a long-life project with them.

### Understand the Company's History & Structure

New solar companies are regularly being founded, and while the entrepreneurial spirit should be applauded, it is difficult to recommend working with a solar provider who lacks a proven track record. Solar panels typically last for over 30 years, so it is wise to work with a company that will be around for that long.

It is also very important to understand the developer's typical project type. Many solar companies focus on residential installations, so their resources may not be suitable for commercial purposes, even if they claim a commercial offering. In some cases, local roofers or electricians may also "bridge" to offer solar services, often lacking in quality or scope.

Additionally, a company with solid financial backing like Safari Energy can provide better or more flexible cost solutions for a project. National developers can leverage network connections, economies of scale, and preferential rates that independent or regional solar companies cannot.

## Ask About Equipment

During your initial meeting with the solar company representative, it is important to get as much specific information collected as possible. While some proposals may offer “Tier 1” or “Grade A” solar panels (modules), the specific make and model can tell you how much the developer values quality and efficiency.

With modules, inverters, racking and wiring identified, it is much easier to gather an accurate assessment of a system’s projected production. Solar developers should come prepared with sunlight analyses, proposed array placements for your property’s specific space, and financial structure. Before your initial meeting, solar developers will likely ask to collect electricity usage information to accurately size and price your system.

When considering a partnership, be sure to request a detailed financial analysis and, if necessary, multiple deal structures that explore various models for system ownership.

Solar developers should be able to provide proposed cash flows that will identify a point in time when the system will have generated enough returns to offset the initial investment. These estimates also typically include a depiction of the emissions offset by the system, alongside environmental impact equivalencies such as how many homes the system could power or how many cars it would replace.

## Consider Warranties and Future Costs

Since solar panels can last for decades, it is important to understand what the solar developer will be responsible for. Will they clean or replace panels as needed? What if an inverter fails? Will they move the system if the roof needs repairs? When reviewing your contract, be sure to understand both the factory and workmanship warranties as well as any guarantees associated with the solar installation.

In some cases, solar developers can perform maintenance requests free of charge, with ongoing service bundled into the price. This may not be necessary if you have a licensed electrician or building manager capable of aiding in potential fixes or leveraging a network of contractors when needed. A monitoring system is also very important, with many companies offering it as a part of the total package.

## Avoid the Request for Proposal Process

RFPs may seem like the logical way to get a project started – the ideal RFP sources the most qualified vendors allowing for easy comparison and confidence that you’re getting the best price. The reality, however, is that RFPs can be costly, cause significant delays, and lead to inferior quality.

RFP processes are typically run by facilitators who are not professional engineers or electricians. Their goals are not always aligned with optimizing financials or efficiency and often miss crucial elements of system design and engineering. This approach can eventually lead to project underperformance or even failure and may not accurately assess:

- Permitting processes
- Safety hazards
- System component quality
- Wiring length and gauges
- Incentive application qualifications and deadlines
- Project timelines
- Project costs
- Utility interconnection particulars

On top of project concerns, a time-consuming RFP can incur the unnecessary cost of a commission taken by the facilitator. While many RFP managers claim that they save money by streamlining the process of evaluating vendors, they often create a race to the bottom, rewarding the cheapest installers who don’t necessarily seek a long-term relationship to ensure the project continues to perform.

With some due diligence, working directly with a solar developer can be the best way to get a project completed efficiently and effectively. Middle market companies that can avoid expensive, drawn-out procurement exercises stand to benefit the most from this approach. For more information on the downsides of RFPs, read this resource from [pv magazine](#).





Safari Energy project in California

## How to Pitch the Project

Once you've decided that solar is best for your business, it is time to secure the green light within your organization. While proposing any change to the status quo can seem daunting, solar energy adoption should face little resistance if presented correctly.

We advise taking the following steps when presenting solar as a wise business decision:

1. **Address the common concerns first.** Solar can be a significant commitment, so it is important to demonstrate the effort put into evaluating the risks and potential benefits of installing a system. Most companies want to understand the overarching strategy and purpose of a solar project – is it to save on electricity costs? Is it to become a more sustainable part of a supply chain? Assure the team you have evaluated the project site, equipment, incentives, and financing options.
2. **Financial benefits.** As mentioned, project economics are usually the main criteria for solar installations. Companies pursuing PPA deals will want to understand out of pocket costs (typically \$0), annual and total savings, maintenance costs, and the effective PPA rate. For those who plan to own the system, present the system cost, tax credits, incentives, and internal rate of return.
3. **Benefits beyond financials.** If the economics are favorable, then meeting environmental goals is an additional benefit. Present the expected percentage of consumption to be offset, carbon emissions avoided, and equivalencies. If you're a middle-market company that is part of a supply chain, explain how the improved ESG rating will appeal to your customers' procurement officers.
4. **Show them the ideal partner.** Present your preferred solar partner's stellar track record and investment-grade backing or invite them to do so directly. Middle market companies typically want to know they're working with a trusted advisor who will be there for them to provide solutions to energy challenges. By doing the groundwork research, you will be confident in presenting a dependable solution showcasing flexible options for your company's operating future.



*Safari Energy project in Colorado*

## YOUR SOLAR PARTNER

[Safari Energy, LLC](#) is the solar partner of choice for commercial and industrial customers, real estate owners, public sector organizations, and solar developers seeking competitive financial solutions for their projects. Headquartered in New York City, Safari Energy operates nationwide, helping customers unlock enormous economic value and drive significant energy savings. With extensive interdisciplinary expertise, Safari supports the growth of distributed energy resources and PPL Corporation's focus on advancing a sustainable energy future.

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