

September 15, 2022

Forecast for Insuring Commercial Solar Panel Installations: Partly Cloudy



Richard Reizen



Hannah Batsche

Construction

Insurance Counseling & Recovery

The United Nations recently described climate change as “the defining crisis of our time.” Further, a flagship UN report on climate change declared that the world is on a fast track to disaster because of rising carbon emissions. As we are all aware, soaring temperatures, more severe and frequent storms, rising sea levels and increased wildfires are among the parade of threats with costly consequences resulting from decades of ignoring climate change. According to *Thomson Reuters*, insured losses from natural catastrophes such as wildfires and storms have increased by 250% in the last 30 years.

In light of these threats, the federal, many state and even some local governments are taking action to encourage a retreat from fossil fuels through the use of less expensive and cleaner sources of energy, including solar panels. These governments over the past few years have offered a patchwork of tax credits and rebates to make the use of solar energy more desirable for residential, commercial and industrial projects alike.

Most recently, Congress passed the Inflation Reduction Act, which earmarks \$369 billion for climate and clean energy investments, making it the largest, most ambitious climate legislation Congress has ever passed. The act increases and extends renewable energy tax credits for projects such as the purchase and installation of solar panels.

However, despite how well-intended and important these government efforts to encourage conversion to solar energy may be, potential solar customers (especially in the manufacturing and industrial sector), need to be aware of a major problem they may face: Insurers are becoming increasingly hesitant to cover buildings with rooftop solar arrays. Sometimes, even if coverage is offered, the expense would not only offset any savings achieved by solar installation, but also would cost owners substantial amounts beyond the lost savings.

The insurance industry's reluctance to cover rooftop solar arrays is based in part on a handful of high-profile rooftop solar fires, most notably fires suffered by Walmart several years ago and by Amazon more recently. While such fires tend to be extremely rare, are usually easily contained and are caused by atypical installation procedures, insurers are basing their actions solely on calculation of Probable Maximum Loss (PML).

The PML analysis for these projects is that if a rare fire occurs and if it permeates the roof line, the location of equipment and flammable materials below the roof would result in a total loss. Regardless of how remote that scenario is, insurers are increasingly unwilling to assume the risk. Simply put, they view the potential loss from a fire as too high.

This article will discuss the government incentives available, the rooftop fires that have occurred and the insurance industry's response. We will also discuss steps that can make coverage more likely and avoid construction starting without insurance approval so that an owner will not be left holding the bag.

Government Incentives

To encourage commercial and residential owners to make the transition to solar power, federal, state and local governments are offering financial incentives to offset expenses. For instance, the federal government enacted the Solar Investment Tax Credit (ITC) in 2006, which gives those who install a solar energy system providing electricity for both residential and eligible business projects (as defined in the act) the ability to claim the tax credit on federal income taxes. For systems installed between 2020 and 2022, the ITC will provide a 26% tax credit, and 22% for systems installed in 2023. Not only does this tax credit include the cost of solar panels, but also all labor costs (such as assembly or permit fees), mounting equipment and energy storage devices such as a battery, as well as wiring, inverters and even sales tax. Due in part to this dollar-for-dollar reduction of taxes, the solar power industry has grown tremendously, with an average annual growth of 50% over the last ten years.

The newly enacted Inflation Reduction Act also has an array of rebates and tax breaks for those who implement green technology. Among the act's most important green home provisions is extending a 30% federal tax break for the cost of rooftop solar installations for 10 years for solar projects that begin construction before January 1, 2025.

Several states also offer tax credits or rebates as motivation to install solar systems that can be stacked on top of federal tax credits. New York, for example, has the "NY-Sun Megawatt Block" incentive, a program offering residents or commercial solar consumers a dollars-per-watt cash rebate for their systems of up to \$1,000 for every kilowatt of solar power installed.

Even local governments are getting into the act. For instance, the public electric company in Tallahassee, Fla., offers loans for solar roofing up to \$20,000 with an interest rate of 5%. San Diego also encourages solar power use on commercial buildings by expediting permitting for such projects. Similar incentives offered by other local governments dot the map.

These government programs substantially reduce the cost of installing solar arrays and make their use far more likely.

Rooftop Fires

Although the likelihood of solar panels catching fire remains remote, several high-profile rooftop solar panel fires have occurred. These fires have typically been linked to outdated equipment that is no longer used on new installations or improper installation. Notably, the Walmart solar panel rooftop fires were alleged to be a result of negligent installation techniques and components that were substandard when compared to today's code requirements.

Today, not only are panels and their corresponding systems designed to limit failure points (thus limiting potential installation issues), but the systems themselves are also much safer and resistant to fires as a result of changes to fire classification standards and changes to fire code compliance requirements. In addition, the more recent rooftop fires at Amazon facilities have been small, relatively contained and nowhere near an event of a total loss. Amazon has indicated that it remains bullish on rooftop solar arrays and will be recommissioning its rooftop solar arrays after it completes its investigation.

While these fires remain few and far between, and have generally been contained, they have spooked an already weary insurance industry still recovering from massive climate losses, including fire losses, which have led to the current reluctance to insure such projects by some of the larger insurance companies.

Steps to Minimize Risk

Although the issues Walmart and Amazon experienced have not been widespread among the solar industry and did not lead to a total loss, there are steps an owner can take to minimize the potential for fires in the future. Not only will these steps help reduce the likelihood of a fire but also may help guide an insurer towards providing reasonably priced insurance coverage that doesn't eliminate the economic benefits of installation and use of a solar rooftop system.

Timber Construction

Arguably, and more appropriately for new ground-up construction, the use of timber should be limited when possible since timber, not surprisingly, is highly combustible in a fire. Alternate materials include steel or concrete members for columns and beams, as

well as metal decking if appropriate.

Use of Non-Combustible/Non-Fire Propagating Materials

Not every project affords the ability to reduce the use of all timber components. Most likely, a large industrial project will contain some amount of timber in the overall construction. Thus it is important to use protective materials that significantly reduce the ability of a fire to reach the combustible wood structure below. One option is to use non-combustible material such as DensDeck in the rooftop assembly that ultimately supports the solar system. These non-combustible materials are classified as fire barriers and can be used as a fire barrier over both combustible and non-combustible roof decking. Through the use of crystallized water, this decking significantly reduces any possibility of fire propagation across the roof structure should a solar panel fire occur.

Fire Suppression System

Not to be confused with a more common sprinkler-type system, a fire suppression system is more robust and actually capable of extinguishing a fire completely. Although the likelihood of a fire burning through the rooftop deck assembly itself is rare if using non-combustible materials, a fire suppression system can help completely extinguish any fire that may burn through. Equally important, such a system can be used to extinguish any embers that may fall on materials or equipment stored in a facility, again reducing a fire's spread and chances for a total loss.

Fire Department Approvals

Conducting a preliminary review of your facility's locality to the local fire department also can provide guidance on how long it may take for first responders to arrive and extinguish a fire. Obviously, the closer the facility is to the firehouse can significantly reduce the time for an uncontrolled fire to spread. An additional – and perhaps vitally important – step is contacting your local fire department to request an inspection of your rooftop solar system. Fire officials may be able to provide comments on accessibility during a fire, along with identifying other concerns that an owner can proactively address to aide first responders' ability to efficiently suppress any fire. Owners should also consider adding a rooftop system that would automatically alert the local fire department in the event of fire, without having to rely on someone reporting the fire.

Equipment and Installation

Lastly, and most importantly, any rooftop solar fire will be a result of failures with either the equipment or installation. That said, equipment should be compliant with the most up-to-date fire codes and qualifications. The design of the system itself should reduce modes of failure through the use of elevated junction boxes, good cabling and batteries made of less fire-prone materials. Finally, even if your equipment and system design anticipates and addresses modes for failure, the design is only as good as its installers. Understanding the qualifications of your installers is key to ensuring that the system will be installed as designed without cutting any corners. The equipment should also be inspected regularly.

Dealing With Your Carrier

The reluctance of the insurance industry to insure rooftop solar arrays in manufacturing and other commercial projects is evolving and varied, depending on the carrier and the circumstance. Our sense is that this position will continue to evolve as fire safety advancements continue to be made and the insurers are faced with losing substantial business and important clients.

It is important to keep in mind that the trend of insurers to refuse or charge high premiums for coverage is **not directly tied to an actuarial fire probability in operating solar arrays.** Rather, it is based on its analysis of PML, as discussed above. The industry acknowledges that PML is unrelated to any attempt to determine actuarial fire probability of a fire occurring, but instead is based on the maximum loss that would occur **if a rooftop solar fire occurred.** The industry notes that the likelihood of a rooftop solar array remains low.

As a result, there is no magic bullet for getting insurance at reasonable rates for a contemplated rooftop solar panel project. However, the following steps should be taken:

1. Incorporate the steps described above if possible. This will not only increase the likelihood getting the project insured, but, more importantly, will provide for the safety of your employees.
2. Owners should present their drawings and specs for the solar panel project to insurers before construction begins to make certain that owners will know the status of coverage before the project begins. This will also allow for the insurers to make suggestions to the design, materials selection and construction of the system that may make the insurer more comfortable.
3. Owners should make sure that their brokers understand the issues and have access to multiple carriers and lines of insurance.

The transition to renewable, clean energy is an important part of our future. However, if such projects cannot be insured, that transition may not be possible. We have offered a few considerations and best practices for owners to consider in making the transition to rooftop solar arrays. It is our sincere hope that the government and insurance industry will work together to eliminate the increasingly serious impediment of obtaining reasonable insurance coverage for these projects. Such projects are simply too important to be derailed by a general adversity to risk.

For more information about any of these issues, contact a member of Gould & Ratner's [Policyholder Insurance Coverage Practice](#) or [Construction Practice](#).