



Frequently Asked Questions

Basics About Solar

Is it sunny enough where I live?

Yes! Solar works in every state. While solar irradiation levels vary across the United States, a homeowner can produce a significant portion of their electric load from their roof space no matter what state they are in (assuming un-shaded, proper tilt, orientation, and installation). In fact, Germany, with a solar resource equivalent to Seattle and Alaska has *six times* the installed capacity of the United States.

Isn't solar too expensive?

While solar power isn't free, global solar industry growth has reduced costs steadily and rapidly in recent years, dropping 36% in the past two years. Combined with recent technological advancements, solar is becoming more cost competitive with more traditional power sources and is predicted to be cheaper than coal within the next five years.

Is solar heavily subsidized?

Every energy technology takes advantage of subsidies. Fossil fuel and nuclear power enjoy loan guarantees, accelerated depreciation, tax credits, caps on producer liabilities, and even bankruptcy protection. In the case of renewable energy, subsidies have only been in place in recent years, whereas the majority of fossil fuel and nuclear subsidies have been in place up to a century.

Does anyone other than environmentalists have solar?

Solar is for everyone! 90% of Americans think that it's important to support the development of solar power. Everyone from firefighters to the US military and NASCAR have adopted and are using solar power. In addition, large companies like Google, Wal-Mart, Toys-R-Us, Staples, and others have installed large amounts of solar to power their operations.

New technology always gets outdated so quickly. Won't that happen with solar technology?

Solar is a mature technology. Basic solar photovoltaic (PV) technologies have been around for more than 30 years. While efficiencies have increased and costs have decreased, solar PV systems built in the 1970s still produce the same products (kilowatt hours of electricity) as any modern solar PV system. The solar industry, like other electricity generating industries, does not evolve in the same way that the

electronics industry has. If solar makes sense for you today, then there is no reason to wait to take advantage of solar power's benefits.

Will I have to worry about toxic metals if I install solar panels?

The two most common photovoltaic (PV) cell technologies, monocrystalline and polycrystalline cells, are constructed of silicon (glass), aluminum (frame), and copper (wiring), and do not usually contain embedded heavy metals or other potentially toxic substances. Thin-film PV modules may contain heavy metals such as cadmium or telluride; however, numerous studies show that there is little to no evidence of any toxic leaching from these types of solar modules. Additionally, thin film companies such as First Solar offer robust recycling programs to reclaim such modules at the end of their useful lives.

How tough are solar panels? Will they last?

Recent reports of defective and underperforming panels have raised questions regarding solar panel quality and their useful lifespan. A number of international rating agencies including the Underwriter Laboratories (UL) and the International Electrotechnical Commission (IEC) have developed standards and certifications specific for PV panel manufacturers and models and include rating standards for extreme weather conditions, including hurricane force winds and hail storms.

Choosing an Installer

What should a solar installer be able to do?

A solar photovoltaic (PV) installation may be rooftop, or ground mounted. If mounted on a pitched roof, the installer will likely be penetrating and attaching hardware to the building's roof structure as well as making electrical connections to and through the building's electrical panel. A system mounted on a flat roof will likely be ballasted and not require any roof penetrations. A solar heating installation includes these things as well as circulating water or an antifreeze solution through plumbing. If the solar photovoltaic installation is ground mounted, it may require footings to be poured.

Doesn't the state have a certification or license for solar installers?

The State of Indiana currently does not have a specific certification or licensing program for electricians or for PV solar installers. In the absence of a state regulation in this regard, counties and municipalities with approved building departments have authority to require local certification, registration, or other options.

How are solar installers regulated where I live?

There are a wide variety of requirements that different jurisdictions in Northwest Indiana use to regulate general contractors, electricians and roofers, and solar PV projects generally fall under these regulations. Check with your local municipality to see what the local requirements are.

What kind of professional accreditations are there for solar installers?

There are several accrediting organizations that certify solar installers with different levels of training and experience required by each.

The **North America Board of Certified Energy Practitioners** (NABCEP) is the longest standing certification program currently available. They offer three levels of certification for solar installers.

- NABCEP Entry Level – indicates that the individual has successfully completed coursework in the design, installation, and operation of PV and Solar Heating Systems and passed an Entry Level Exam.
- NABCEP Certified PV Installation Professionals or Certified Solar Heating Installers have extensive experience, have passed rigorous examinations, have demonstrated capability to supervise complete system installations, and detailed working knowledge of electric and plumbing codes, standards, and accepted industry practice. Minimum requirements include 58 hours of advanced PV training, including at least 40 from programs accredited or certified by the Interstate Renewable Energy Council, the Federal Department of Education, the US Department of Labor Registered Apprenticeship Training Programs, institutions approved by State Contractor Licensing Boards, or State registered Vocation/Technical Training Programs.
- Eighteen of these hours may be from course covering building and electrical codes relevant to solar PV systems. In addition to training, they complete a Professional Certification Exam, and provide NABCEP with documentation of 3-5 installations where they have acted in the role of contractor, lead installer, foreman, supervisor, or journeyman.

Underwriters Laboratory (UL) offers a PV System Installation Certification.

- The UL certification is only available to qualified electricians who have completed the OSHA 30-hour construction training.
- Individuals must pass one three hour exam intended to measure the necessary competencies for a qualified electrical professional with several years of hands-on experience in the field. Hands-on experience or equivalent knowledge targeted includes

installing, building, repairing, troubleshooting, diagnosing, verifying and performing tasks involved in either residential or commercial electrical work.

The Electronics Technicians Association (ETA)

- ETA offers a Photovoltaic Installer-Level 1 certification. Individuals receiving this certification must have hands-on training from an ETA-approved school and be knowledgeable in topics such as solar resources and principles; selection identification proper installation sequence, performance characteristics and troubleshooting methods; permitting; best safety practices; and economic impact.

