

FREQUENTLY ASKED QUESTIONS ON GROUND-MOUNTED
SOLAR PHOTOVOLTAIC SYSTEMS



Ag Land Use

How much farmland is utilized by a solar project?

Only a portion of farmland is suitable for solar energy generation. Supplying the entire U.S. with 100% PV solar energy would require about 0.6% of America's total land area.

When a project is decommissioned, the land is returned to its original state, and farmers have the opportunity to go back to farming the land if they choose.¹

Cleaning Protocol

What is the best way to clean solar panel arrays?

Panels are typically only cleaned a few times a year based on soiling levels, though areas that receive regular rainfall can significantly reduce the need for deliberate cleaning of the panel. Should a lack of rain or extreme dust conditions warrant cleaning, a water truck is typically used to wash dirt and natural buildup from the panels. However, in the right situation, an arrangement with a participating landowner may be made to use their water supply.

Cost of Power

Will a solar project in my community lower my utility bills?

A benefit of solar power is that it provides a long-term hedge against increasing prices. Solar power does not consume any fuel and allows utilities to purchase energy at stable long-term rates, which may help reduce future electricity price increases. Customers will save money in the long term, and once built, this solar project will be an important contributor to the county's tax base. This will provide more money for schools and essential government services.

End-of-Life Decommissioning / Recycling

How are solar panels managed after they are no longer in use? Can they be recycled, and do hazardous waste disposal requirements apply?

The average life of solar PV panels can be 20-30 years or longer after initial installation. At the time of decommissioning, panels may be reused, recycled, or disposed of. There are a few different types of solar panels used in ground-mounted PV Systems. Solar module manufacturers typically provide a list of materials used in their product, which may be used to determine the proper disposal requirements at the time of decommissioning.²

What happens during the decommissioning phase?

Upon completion of the economic life of a project, or potentially permit expiration, if the project owner determines not to apply for a new permit, the decision to decommission the facility can be made. Decommissioning refers to removal of equipment (panels, racking, wires, and inverters and transformers) as well as other operational structures (foundations and fencing) and restoration of the site. Depending on specific project decommission agreements, during this process, the site may be revegetated to help with erosion and dust control, and access roads may be removed. Unlike some other forms of development, a decommissioned solar site can be repurposed for other uses, such as agriculture production.³

Efficiency

Where does the power go?

Think of solar energy just like the other crops that are currently harvested in your community, perhaps corn, wheat, or dairy. While some of those resources stay local, many are shipped outside your community but provide valuable income and jobs locally. Solar energy is no different. While it is impossible to know where exactly the electrons flow once they enter the electrical grid, the benefits of producing that energy, such as tax revenues, stay local.

Do solar panels still work on a cloudy day?

Before constructing any solar project, we evaluate historical meteorological data to determine the facility's expected output. Photovoltaic panels can use direct or indirect sunlight to generate power, though they are most effective in direct sunlight.

Solar panels will still work even when the light is reflected or partially blocked by clouds.⁴

Will my neighbors and I be eligible for service from this solar project?

The electricity generated by a utility-scale solar project will be injected into the high-voltage electric grid and wholesale electric market at the local substation. From there, it will follow the grid to areas of demand. It will not be available for direct purchase by retail electricity customers.

How do solar panels perform in extremely high heat?

Solar panels are designed to perform in extreme heat or cold. There are many reputable solar panel manufacturers, but all produce panels with similar operational requirements. For bifacial solar panels, -40 degrees to 185 degrees Fahrenheit module temperature is acceptable.

Solar Panel Design / Visual Impacts

Why was this area selected for a solar project?

The project area is suitable for utility-scale solar facility development due to its proximity to available transmission capacity and significant energy demand within the electrical grid. The project also provides significant local economic benefits and is a form of development that will maintain the rural character of the area.

Can chemicals that might be contained in solar PV threaten public drinking water systems and/or wetland resources?

All solar panels are contained in a solid matrix, are insoluble, and are enclosed. Therefore, releases are not a concern. Rules are in place to ensure that ground-mounted solar arrays are installed in a way that protects public water supplies, wetlands, and other water resource areas.⁵

Are there health risks from the electric and magnetic fields (EMF) from solar panels?

Solar energy produces no emissions, waste, odor, or byproducts. Silicon solar cells were produced commercially in the 1950s, and the first solar power plant was built over 35 years ago in southern California. PV arrays generate EMF in the same extremely low frequency (ELF) range as electrical appliances and wiring found in most homes and buildings.

The extremely low-frequency EMF from PV arrays is the same as the EMF people are exposed to from household electrical appliances, wiring in buildings, and power transmission lines (all at the power frequency of 60 hertz). In comparison, EMF produced by cell phones, radios, and microwaves is at much higher frequencies (30,000 hertz and above). Clean Energy Results Questions & Answers Ground-Mounted Solar Photovoltaic Systems, prepared by Massachusetts Department of Energy Resources, Massachusetts Department of Environmental Protection, and Massachusetts Clean Energy Center (June 2015, page 10).

A person outside of the fenced perimeter of a solar facility is not exposed to significant EMF from the solar facility. Therefore, there is no negative health impact from the EMF produced by a solar installation. In 2005, a task group of scientific experts convened by the World Health Organization (WHO) concluded that there were no substantive health issues related to electric fields at levels generally encountered by members of the public.⁶

Are the materials inside a solar panel safe?

Yes. Modern commercial solar panels do not contain sufficient hazardous material to pose a danger to the environment and human health. The primary component in crystalline silicon solar cells is silicon, the second-most common element on earth.⁷

Property Values

How do ground-mounted solar PV arrays adjacent to residential neighborhoods influence the property values in those neighborhoods?

Reported by American Clean Power, research shows that there is no evidence that solar projects have adversely impacted neighboring properties. The solar industry drives economic development, especially in rural communities, and can benefit all property owners through tax payments for roads, schools, and community services. Various studies have been completed in the U.S. and are shared on CleanPower.org.⁸

1 The Regional Per-Capita Solar Electric Footprint for the United States, Technical Report NREL/TP-670-42463, prepared by The National Renewable Energy Laboratory (Golden, CO, 2007), page 20.

2 Massachusetts Department of Energy Resources. Clean Energy Results Questions & Answers Ground-Mounted Solar Photovoltaic Systems. Massachusetts Department of Environmental Protection. Massachusetts Clean Energy Center, June 2015, page 7.

3 American Clean Power, "What Happens When a Solar Facility is Decommissioned?," CleanPower.org, December, 2021, <https://cleanpower.org/resources/what-happens-when-a-solar-facility-is-decommissioned/>

4 Solar Energy Industries Association, "What happens to solar panels when it's cloudy or raining?," SEIA.org, 2023, <https://www.seia.org/initiatives/what-happens-solar-panels-when-its-cloudy-or-raining>

5 Clean Energy Results Questions & Answers Ground-Mounted Solar Photovoltaic Systems, prepared by Massachusetts Department of Energy Resources, Massachusetts Department of Environmental Protection, and Massachusetts Clean Energy Center (June 2015, page 20).

6 NC State University. Health and Safety Impacts of Solar Photovoltaics. NC Clean Energy Technology Center, March 2026, pages 27, 29.

7 American Clean Power, "Solar Panels and Your Community," CleanPower.org, August 30, 2022, https://cleanpower.org/wpcontent/uploads/gateway/2022/08/ACP_FactSheet_SolarCommunity_220830.pdf

8 American Clean Power, "Property Values and Utility-Scale Solar Facilities," CleanPower.org, March 2023, <https://cleanpower.org/resources/property-values-and-utility-scale-solar-facilities/>