

FREQUENTLY ASKED QUESTIONS ON GROUND-MOUNTED
SOLAR PHOTOVOLTAIC SYSTEMS



Ambient Temperature

Does the presence of ground-mounted solar arrays cause higher ambient temperatures in the surrounding neighborhood?

All available evidence indicates that there is no solar “heat island” effect caused by the functioning of solar arrays. PV panels are off the ground and surrounded by air, so the heat is dissipated very rapidly. It does not build up and become stored as with rooftops or pavement.

Cleaning Protocol

What is the best way to clean solar panel arrays?

Panels are cleaned only with water, and no chemicals are used. They are cleaned only a few times a year based on soiling levels. Typically, water is trucked in. However, in the right situation, an arrangement with a participating landowner might be made to use their water supply. Areas that receive significant and regular rainfall can significantly reduce the need for deliberate cleaning of the panels.

If it snows, does the snow need to be actively removed from the panels?

Snow can serve as a natural cleaning agent that wipes away any dirt as it melts and slides away. In most cases, snow removal is unnecessary, but operations and maintenance personnel will monitor the solar panel array and can remove snow if necessary.

Cost of Power

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

An important benefit of solar power to ratepayers is that it provides a long-term hedge against increasing prices because it does not consume any fuel and allows utilities to purchase energy at stable long-term rates. This may help to reduce future increases in electricity prices. This saves money for ratepayers in the long term. Once built, this solar project will be an important contributor to the county’s tax base, providing more money for schools and essential government services such as first responders.

Efficiency

Where does the power go?

Powers Butte Energy Center is a utility-scale solar energy facility that will serve customers within Idaho Power or other local energy company’s regional transmission system. This means that the electricity generated by the solar project will be injected into the high-voltage electric grid and wholesale electricity market at the Bowmont substation. From there, the energy will be distributed to customers connected to that transmission system.

How will solar PV arrays impact deer or other hunting?

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

Health / Materials

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.¹

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

Solar energy produces no emissions, waste, odor, or byproducts. The extremely low-frequency EMF from PV arrays and transmission lines is the same as the EMF people are exposed to from household electrical appliances and wiring in buildings.

Property Values

Do ground-mounted solar PV arrays negatively impact property values?

The American Society of Farm Managers & Rural Appraisers posted a blog on February 16, 2021, summarizing several studies' findings on the solar impact on rural property values. In addition, it featured the conclusions of four land appraisal experts on the same topic. The studies and experts reported no known consistent negative impacts on rural area property values due to solar. Especially when developers work with landowners and residents to properly sit and conceal solar farms from view. (<https://www.asfmra.org/blogs/asfmra-press/2021/02/16/solars-impact-on-land-values>)

Sound

How does the sound of large solar projects impact nearby residential and agricultural property?

Solar projects are effectively silent, except for the tracking motors and inverters that might produce an ambient hum. This is typically not audible from outside the project enclosure.

Public Safety

What public safety issues arise from accessing areas where solar arrays are installed? Can electrical and other solar-related equipment cause fires?

Large-scale ground-mounted arrays are enclosed by fencing. This prevents children and the general public from coming into contact with the installations, thus preventing unsafe conditions. The National Electric Code has mandatory requirements for the electrical safety of solar PV arrays. It requires that conductors, which are part of solar PV arrays, be installed so they are not readily accessible. In addition, warning signs and sometimes alarm systems are installed to deter unauthorized individuals from entering the solar array area.

Only a small portion of the materials in the panels are flammable, and those components cannot self-support a significant fire. The flammable components of PV panels include the thin layers of polymer encapsulates surrounding the PV cells, polymer back sheets (framed solar panels), plastic junction boxes, and insulation on wiring. The rest of the panel is composed of non-flammable components, including the layers of protective glass that make up three-quarters of the panel's weight.

Solar Panel Design / Visual Impacts

What are the visual impacts of the solar array once constructed?

Large solar projects have similar characteristics to a greenhouse or single-story residence. They are often enclosed by fencing and/or landscaping to minimize visual impacts.

How important are reflectivity and potential visual impacts from solar projects, especially near airports?

Solar panels are designed to absorb and convert solar energy into electricity. They reflect only about 2 percent of incoming light, so issues with glare from PV panels are rare. Solar module glass has less reflectivity than water or window glass, and reflected light from solar panels will have a significantly lower intensity than the glare from direct sunlight. Many projects throughout the U.S. and the world have been installed near airports with no impact on flight operations. There have been no U.S. aircraft accident cases in which glare caused by a solar energy facility was cited as a factor. Proper siting procedures can ensure panels are placed to minimize any potential glare to surrounding areas.¹

How high are the panels off the ground? How tall do the panels stand?

Solar panels sit approximately five feet off the ground, depending on site conditions. Considering the latest solar panel size is 51 inches wide x 94 inches tall, the approximate total height of the panel at its maximum rotation angle is eight to nine feet.

Why was this area selected for a solar project?

The project area is suitable for utility-scale solar facility development based on the following factors: proximity to available transmission capacity, significant energy demand within the electrical grid, landowner and community interest, significant local economic benefits, and a form of development that maintains the rural character of this area.