CHOCTAW FIELDS
SOLAR PROJECT

FREQUENTLY ASKED QUESTIONS ON GROUND-MOUNTED

SOLAR PHOTOVOLTAIC SYSTEMS

Ag Land Use

Do solar power facilities in rural areas take farmland out of agricultural commission permanently?

The use of ag land for a solar energy facility is only temporary, and the land can be restored to its original condition after the solar farm is decommissioned. Compared to other forms of development where farmland is paved over (for shopping centers, amusement parks, manufacturing facilities, suburban housing tracts, and highways), solar projects prevent more impactful development from occurring, preserving the land for agricultural use in perpetuity.

The total amount of agricultural land being used for solar energy is minuscule compared to the conversion of agricultural land permanently to residential housing and commercial development.

In arrangements where a landowner has agreed to lease property to a solar project, the ongoing annual lease payments will continue to go to the landowner, who will retain ownership of the land both during and after the lease. At the end of the lease and when the project is responsibly decommissioned, the landowner could resume farming the land. In other development conversions, the farmer sells the land to another party - usually a housing developer or commercial real estate broker.

Solar farms present landowners with an opportunity for a higher value use on their land. This also allows the landowner to diversify their income away from agricultural products alone, better weather economic downturns, and to keep the land in the family.

Farmland has gotten more productive over the years with better farming equipment and techniques, resulting in higher yields on the same amount of land. This is also due to improvements in seed varieties, fertilizers, pesticides, machinery, reduced tillage, irrigation, crop rotations, and pest management systems.[3]

How can solar power facilities enhance rural ecosystems?

There are many important components to preserving and enhancing a healthy environment for farming, and a solar facility may support a rural community over generations through: Improved Soil Health - a solar facility can passively enhance the soil through the establishment of regionally appropriate perennial vegetation underneath and around the solar panels. Reduced Nutrient Runoff - vegetation at solar sites does not typically require routine applications like fertilizer, and perennial grasses further stabilize soil, which decreases runoff by intercepting sediment. Enhanced Stormwater Management – once operational, a typical solar project will maintain permanent vegetation on site, and the spacing between the panels and rows enables water to flow underneath and between the panels. Soil Formation and Retention – during construction, compaction may occur at select parts of a solar project site. Therefore, developers may aerate or till the soil or plant deep-rooted vegetation to mitigate these impacts - consistent with federal and state construction permits. After construction, tillage of the soil does not occur. Reduced Pesticide Use – solar development does not require insecticides and herbicides may only be used during the site preparation but is applied more targeted once the project is operational. Reduced Water Use – solar sites typically require little water during construction and operations, and rainfall is generally sufficient to settle dust and clean panels. Preserving Future Farm Opportunities – land leases for solar can help families preserve their farm for the next generation through stable income to support farm operations and relieved pressure of selling to permanent land use development like residential or commercial real estate.[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.

Efficiency

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.[2]

Where does the power go?

Choctaw Fields Solar Project is a utility-scale solar energy facility that will serve customers within the Southwest Power Pool regional transmission organization. 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 Hugo 138 kV Power Plant. From there, the energy will be distributed to every consumer that is connected to that substation and line.

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.

Health / Materials

Can solar panels be damaged by hail and strong winds?

Solar panels are designed to withstand extreme weather, including hail and thunderstorms. However, just like your car windshield can get damaged, the same can happen to solar panels (though rare). If a solar panel were to become damaged from severe weather or any other reason, it would likely be the glass that has become damaged, and there would be no risk of exposure to the contents. The Savion team has plenty of experience developing solar projects in high-wind zones. Our projects have shown to be virtually undamaged by direct hits from CAT 3 storms in the past. But, even if something were to hit the area and damage the solar panels, the solar project would be well-insured, with plans to make repairs.

Hunting

How will solar arrays impact deer or other hunting?

There is a possibility there will be a temporary impact on the use of areas adjacent to the property during construction. Once operational, there is very little activity at a solar project, and deer and other wildlife quickly return. It's not a matter of deer staying away -- it's a matter of keeping them out of the solar facility area where they graze on the grasses. Hunting outside the project area is not affected, and the presence of the solar project does not impact the hunting rights of non-participating landowners.

Public Safety

What action is taken to protect the public from areas where solar arrays are installed?

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 requires that conductors, a part of solar PV arrays, are installed so they are not readily accessible. In addition, warning signs and occasional alarm systems are installed to deter unauthorized individuals from entering the solar array area.[4]

Can electrical and other solar-related equipment cause fires?

Only a small portion of the materials in the panels are flammable, and those components cannot selfsupport 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 layers of protective glass that make up three-quarters of the panel's weight.[5]

Sound

Is there sound associated with the solar project?

Solar projects have little to no sound audible outside of the fence line of the project. Inverters and transformers make a humming sound during the day when the facility is generating electricity. Any sound will be inaudible at the fence line. Sound impacts can be mitigated through the use of proper siting procedures. Transportation and maintenance equipment, like cars, trucks, lawnmowers, and string trimmers, are common sources of sound on solar projects that most people are accustomed to hearing elsewhere. Construction of a solar project is typically between 10-12 months.

1 American Clean Power, "How Solar Power Enhances Rural Ecosystems," CleanPower.org, February 2023, https://cleanpower.org/wp-content/uploads/gateway/2023/03/ACP_Solar_and_Farmland.pdf

2 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

3 David G. Loomis, Ph.D. (2020). Economic Impact and Land Use Analysis of Mark Center Solar. Bloomington: Strategic Economic Research.

4 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 14).

5 NC State University. Health and Safety Impacts of Solar Photovoltaics. NC Clean Energy Technology Center, May 2017, page 14.