



GRANGE SOLAR

LOGAN COUNTY, OHIO

GRANGE
SOLAR



OPEN ROAD
RENEWABLES



INTRODUCTION

Open Road Renewables is developing the Grange Solar Project in northern Logan County in partnership with local farmers and landowners. The project will consist of solar arrays installed on private land with thoughtful, robust setbacks from roads and neighboring properties. The solar panels and associated equipment will be secured by an agricultural-style perimeter fence and surrounded by a buffer of trees, shrubs, and other beneficial landscaping vegetation designed to obscure the project from view.

Vegetation management within the project fence will rely on sheep grazing and mowing, keeping the land in agriculture use, providing additional job opportunities, and diversifying the local agricultural economy. The project will use a pollinator-friendly seed mix in areas of the project maintained solely by mowing, providing habitat for native species and significant benefits to long-term soil health.

This project will also bolster American energy independence and contribute meaningfully to the diversification of Ohio's electricity generation mix. Furthermore, the project will generate millions in new, annual revenue for Logan County, townships where the project is located, and Indian Lake Schools.

Open Road's community-first approach to development includes active participation in events throughout Logan County, supporting local causes and initiatives, meeting with community members and soliciting feedback, and designing a maximally beneficial project for all stakeholders. Open Road is actively engaging with the community and local leaders, and we look forward to hearing from you as well.

We hope the information in this packet is helpful. Please reach out to us if you have questions or concerns, would like to provide feedback, or want to learn more!

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UTILITY-SCALE SOLAR "PILOT" PROGRAM

The PILOT (Payment In Lieu of Taxes) program creates a lasting, mutually beneficial partnership between the local community and the utility-scale solar facility, providing significant and sustaining revenues for schools and local governments, creating jobs and spurring economic activity, and supporting our first responders.

Here's what a 500 Megawatt project would mean for Logan County



70% of the workforce on the project must be Ohio residents and paid a prevailing wage

A solar PILOT in action, creating jobs, increasing local and state revenues, and creating clean, domestic energy

Up-To \$180 million

in revenue over the life of the project

\$4.5 MILLION

annually to local schools and services

400-500

construction jobs

~50-60% of tax revenue generated will go directly to the local school districts



FULL-TIME JOBS AND CAREER DEVELOPMENT



FARMLAND PRESERVATION



LASTING COMMUNITY PARTNERSHIP



TRAINING PARTNERSHIP WITH LOCAL VOCATIONAL SCHOOL



REQUIREMENT TO MAINTAIN & IMPROVE INFRASTRUCTURE



EMS & FIRE TRAINING

Each year, \$7,000/MW is allocated to local taxing entities based on millage allocation, plus an additional \$2,000/MW to the County General Fund. Total annual payments to each taxing entity are subject to change based on future changes to the millage rates.



SOLAR COMPONENTS

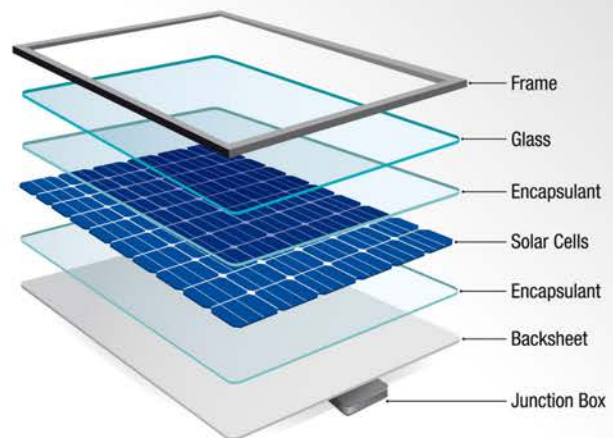


SOLAR PANELS

A Solar PV panel consists of a semiconductor material that absorbs the sun's light and transfers that energy to negatively charged electrons. This extra energy allows electrons to flow through the semiconductor material as electric current, which is collected by conductive metals.

Solar projects use several industry standard solar panel varieties such as Crystalline, Crystalline Bi-facial, and Thin Film. Ohio is home to one of the largest solar panel manufacturing facilities in the entire world.

Solar panels are composed of layers of solid materials including tempered glass, plastic encapsulant, and semi-conductor material – meaning that, if damaged, there is nothing that can leak out. Damaged panels are removed from service and recycled, reconditioned and reused, or properly disposed of.



PARTS OF A SOLAR PANEL

QUICK FACTS

- Solar panels are solid state and contain nothing that can leak out into the surrounding environment
- Solar panels are designed and tested to perform at a high level for over 25 years
- Solar technology is modular, allowing the same technology to be used on a house, farm, school, commercial building, or in a power generating facility.

SOLAR COMPONENTS



INVERTERS

The DC cabling from strings of solar arrays is routed through combiner boxes to higher-capacity DC cabling that routes power to an inverter. Inverters consist of electric equipment that converts the power generated by the solar array from DC to AC. An associated transformer "steps up" the voltage of the AC power to 34.5kV.

In the solar industry, inverters come in two principal forms: Central Inverter or String Inverter. String Inverters, as the name implies, handle a string or several strings of solar panels. A Central Inverter is higher capacity and handles many strings. Almost all utility-scale solar projects in Ohio use Central Inverters.

Central Inverters are mounted on a gravel pad, cement foundation or metal skid in the interior of solar arrays (far from neighboring homes).

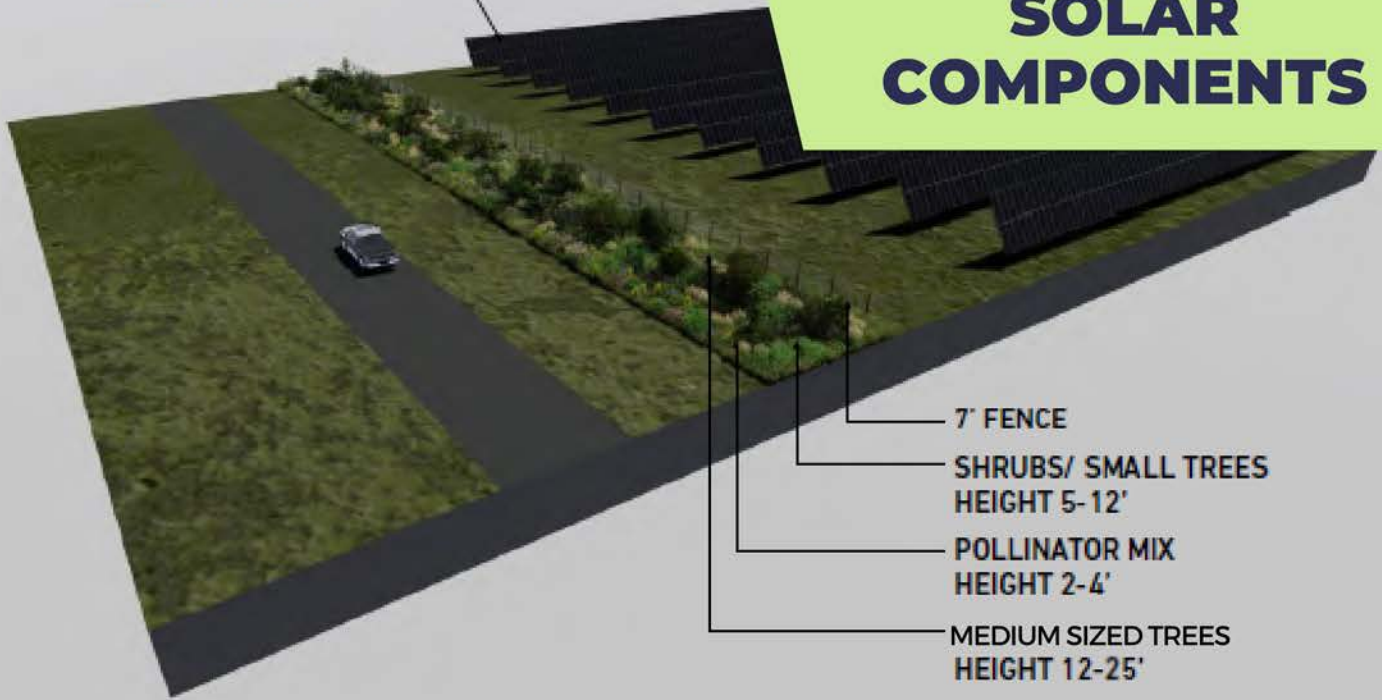
Inverters and the associated step-up transformers are sited to avoid off-site noise impacts during operations. For Open Road projects, this means that Central Inverters will be placed where there is no noticeable increase in noise levels at neighboring homes, and will be at least 500 feet from those homes.

QUICK FACTS

- Central inverters are sited centrally to project arrays to optimize the amount of DC cables used.
- Open Road commits to minimum setbacks from residences of 500 feet.
- Open Road conducts comprehensive sound monitoring and modeling during design and permitting to inform setback distances and avoid any noticeable increases in off-site noise during operations.

SOLAR PANELS

SOLAR COMPONENTS



7' FENCE

SHRUBS/ SMALL TREES
HEIGHT 5-12'

POLLINATOR MIX
HEIGHT 2-4'

MEDIUM SIZED TREES
HEIGHT 12-25'

5 YEAR HIGH DENSITY PLANTING -
POLLINATOR MIX, LARGE SHRUB / SMALL TREES AND LARGE TREES

LANDSCAPING

In addition to setbacks, array height restrictions, and smart project design, Open Road works with Ohio-licensed landscape architects to design robust and area-appropriate perimeter landscaping. Our approach to landscaping involves creating three or more landscaping design densities that we refer to as "modules."

These modules are designed using a wide range of native and adapted plant species, density of plantings, and number of rows of plantings. The goal of each module is not necessarily to fully obscure the project from view from the start. Rather, the goal is to install a low maintenance and resilient planting design that grows over time and is appropriate the area.

Higher-density modules will largely obscure the project from most viewers within 5 to 8 years after planting. High density plantings are planned for anywhere within 1000' of a residential property



QUICK FACTS

- Open Road works with Ohio licensed landscaping architects to design site-specific landscaping modules
- Each module consists of diverse native and adapted plant species appropriate for the area
- The project is responsible for maintaining all project landscaping

SOLAR COMPONENTS



FENCING AND LIGHTING

Solar facilities in Ohio are expected to use agricultural-style fencing. This fencing is typically woven wire and is supported by wood or metal posts that are either driven or cemented into the ground. These fences are usually 6 to 7 feet high and do not include any barbed wire or razor wire. Chain-link style fencing and barbed wire are used only at the project and utility substations, as required by national codes.

The entire perimeter of the project area is fenced for security purposes with secure, gated access points from public roads. Although such fencing can restrict the passage of larger mammals, accommodations can be made in the fence to allow the passage of smaller animals. Corridors along streams, larger ditches, forested areas, and roadway setbacks are frequently left open and function as wildlife corridors.

Solar projects require minimal permanent lighting – typically only at project entrances, inverters, and the substation. Lighting at gates and inverters is motion-activated and shielded.* Otherwise, project lighting during operations is limited to temporary lighting when necessary for maintenance.

* Where consistent with a sheep-grazing dual-use program within the project area

QUICK FACTS

- Fencing is typically 6 -7 feet high.
- Ohio expects the use of agricultural-style fencing without barbed wire.
- Fencing can be made wildlife-permeable to benefit smaller mammals.*
- Solar projects use minimal permanent lighting.

PROTECTING FARMLAND, DECOMMISSIONING, AND RESTORATION

Drain Tile

In addition to complying with Ohio EPA stormwater management regulations, Open Road Renewables will complete a comprehensive Drain Tile Assessment of the project area. The assessment involves extensive mapping of existing drain tile based on information gathered from landowners, maps on file with the Logan County Soil and Water Conservation District, and satellite imagery. The Drain Tile Assessment will be submitted to the OPSB for review along with the project's permit application, and the project will be designed to avoid all drain tile mains and as much lateral drain tile as possible. After construction, any damaged drain tile that impacts drainage on neighboring properties will be repaired or replaced. Open Road Renewables will consult with the owners of adjacent agricultural parcels regarding any shared drain tile infrastructure, and the project's permit will prohibit adverse drainage impacts on neighboring properties.

Soil Management

Open Road Renewables is committed to industry best management practices to preserve agricultural soils during the construction and decommissioning of the project. These practices are designed to protect topsoil and subsoils at the project site. Open Road Renewables will conduct extensive soil testing before construction and after the project is decommissioned to ensure soils are returned to at least their pre-construction conditions. Additionally, solar can help improve long-term soil quality by maintaining year-round vegetative cover consisting of native grasses and pollinator habitat throughout the site, reducing stormwater runoff and associated soil loss.

Decommissioning and Restoration

At the end of a solar project's 40-year life, the project will be decommissioned and the land restored to its previous agricultural condition. Ohio state law requires that solar projects submit financially-assured decommissioning plans before construction that detail the removal and restoration processes. The law also requires solar project owners to post a "decommissioning bond," which will be held by a third party to ensure sufficient funds will be available to cover all removal and restoration costs. The bond amount is re-evaluated every five years throughout the project's life to account for inflation and changes in disposal, labor, and other relevant costs.

Preserving Farmland

Open Road Renewables' payments to participating landowners help families keep farms intact for future generations. As a long-term but temporary land use, utility-scale solar facilities also protect farmland from permanent loss to real estate, commercial, and other types of development. Furthermore, much like a conservation easement, solar facilities allow the soil to rest and for nutrients to be restored during the projects' 40-year life-spans.





FREQUENTLY ASKED QUESTIONS

TECHNOLOGY

Q. What kind of technology do solar projects use?

A. Solar projects use conventional solar panels just like those installed on the roofs of homes and businesses. This well-established technology has been around for decades.

Q. How do solar panels make electricity?

A. When sunlight hits a solar panel, the electrons in the solar panel's semi-conducting material become energized and create an electric current.

Q. Who uses the electricity from solar projects?

A. The electricity from solar projects goes onto the high-voltage electrical grid that supplies power to everyone. That means power will flow to homes and businesses in the area where the project is located as well as to the larger region.

Q. Isn't solar too expensive?

A. No. Innovation and competition have dramatically reduced the cost of solar in recent years. In many areas, solar now costs about the same or less than traditional sources.

Q. Doesn't solar receive federal subsidies?

A. All types of power generation (including coal, gas, hydro and nuclear power) receive economic benefits from certain federal policy incentives, and solar is no exception.

CONSTRUCTION & DECOMMISSIONING

Q. How long does it take to build a solar project?

A. Construction of most solar projects takes roughly 12-15 months.

Q. What happens at the end of the useful life of the solar panels?

A. After the productive life of the panels, which is 35-40 years, the solar project will be "decommissioned", panels recycled or otherwise properly disposed of, and the land returned to its pre solar project condition.

Q. What assurance is there that the project owner will carry out the decommissioning?

A. Financial security, such as a bond, is required to ensure funds are always available for decommissioning and restoration of the land.

Q. What if the owner of a solar project goes bankrupt?

A. If an owner went bankrupt, it is very likely that a new owner would take over. Solar projects are expensive to build but reliable and inexpensive to operate. So, there are strong incentives to continue a solar project's operations.

LAND USE

Q. What impact do solar projects have on the land?

A. Very little. In flat areas, earth moving for solar projects is limited because the steel piles for the panels are installed using the existing grades. Topsoil is preserved and used to establish the ground vegetation for the facility. Essentially the entire site will be planted with native grasses and maintained with minimal herbicide use.

Q. Do solar projects have foundations?

A. The steel piles for panels generally have no foundations and inverters are installed on gravel pads, prefabricated concrete, or metal skids. Fence posts usually have small foundations.

Q. How much of the land in a solar project is occupied by equipment?

A. Solar panels are spaced apart to prevent shading, inspect and maintain the equipment, and maintain the vegetation under and around the panels. Only about 1/3rd of the project area is beneath solar panels.

Q. How is storm run-off controlled?

A. Solar projects are required to install controls to prevent sediment erosion during construction, and, during operation, they must comply with stormwater management permits to protect neighbors and the environment.

Q. Can fields used for a solar project be returned to farming?

A. Absolutely. A study by N.C. State University found that solar has only short-term impacts on productivity and is a "viable way to preserve land for potential future farming."

Q. What happens to drain tile on farm fields?

A. Prior to construction, drain tile is located and mapped, and the facility is designed to avoid as much tile as possible. Open Road commits to ensuring drain tile networks continue to function properly for neighbors.

FREQUENTLY ASKED QUESTIONS



IMPACTS TO NEIGHBORS

Q. Do solar projects make any noise?

A. Because they have very few moving parts, solar projects come close to operating silently. Some of the equipment makes small sounds, but those sounds typically cannot be heard by neighbors.

Q. Do solar projects have any permanent lighting?

A. Virtually none. Motion-activated and downward-facing lights are located only at gates and sometimes at equipment such as inverters or the project substation.

Q. Do solar panels reflect sunlight?

A. Solar panels are designed to absorb, not reflect, sunlight. In fact, they reflect much less light than glass or water. All but about 2% of the sunlight is absorbed and converted to electricity.

Q. Do solar projects create any traffic?

A. Construction activities will create additional traffic, but once completed, the project will have minimal impact on area traffic. Open Road commits to upgrading or repairing county and township roads used during construction.