

Solar And Soil

Solar Facilities Restore Soil Health

Agricultural lands can benefit from solar energy projects with improved soil quality following a project's completion. Combining deliberate site preparation and construction techniques, along with proper site management during operation, can result in healthier organic soil content when the solar project is removed.

Solar Health Principles



1. Soil Armor

Shading

Solar panel installations naturally create cooler micro-climates by shading the ground beneath the panels.



2. Soil Disturbance

Reduced Tillage

Solar projects provide a rest period for the soil. No-tillage results in positive nutrient levels in the soil.



5. Integrate Livestock

Grazing

Well-managed grazing can improve soil quality by substantially reducing chemical inputs compared to conventional farming



4. Live Plant

Revegetation

Native plants thrive underneath solar installations due to the invasive species, and they can then develop deep root systems



3. Plant Diversity

Pollinators

Reseeding with diverse native plants increases soil carbon sequestration, reduces nitrate leaching, and lowers soil N2O emissions



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Site Installation Process

There are no toxic chemicals or processes in system installation and construction. Below are the steps to take land from undeveloped to operationally ready solar facility.



Clearing

Vegetation Cleared

The site is mechanically cleared of large vegetation and the land is surveyed.



Prepping

Posts and Trenches

Support posts are driven into the ground, and trenches for underground wiring are dug.



Installing

Modules and Concrete

Solar panels are bolted to metal support structures, and inverter pads are installed.



Testing

Connection and Testing

Once all components are connected, the system is tested and only then turned on.

What's Inside A Solar Panel

The basic makeup of a solar panel is solar cells, glass, a frame, and a junction box. Solar panels typically consist of tempered glass, polymer, aluminum, copper, and semiconductor materials that can be recovered and recycled at the end of their useful life.

Material By Weight

80% is common tempered glass and aluminum frame. Electricity components make up less than 5% of the weight of most panels. The remaining 15% consists of common plastics.

Sealed From The Elements

Solar cells in panels are encapsulated from air and moisture between two layers of plastic, providing decades of corrosion-free operation.

There are two primary solar cell technologies crystalline silicon and cadmium telluride.

Cadmium Telluride

- Free cadmium is toxic, but all of the approximate 7 grams of cadmium in one panel is in the form of a chemical compound cadmium telluride, which has 1/100th the toxicity of free cadmium.
- Cadmium telluride is a very stable compound that is non-volatile, non-soluble in water, and used in household products like paint and batteries

Crystalline Silicon

- Silicon is the second most common element in the Earth's crust and is obtained by high-temperature processing of quartz sand that removes its oxygen molecules.
- Refined silicon is converted to a PV cell by adding extremely small amounts of boron and phosphorus, both of which are common and of very low toxicity.

*Qcells modules exceed industry testing standards.

Ready To Discuss Your Property?

Connect with our Team:

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