



FACT 01. Soil Quality



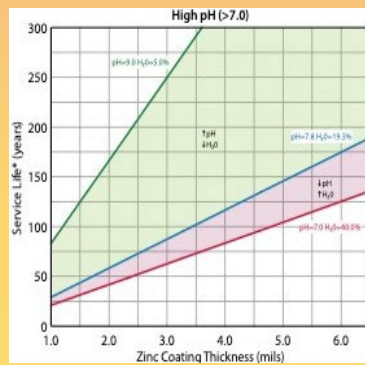
In independent laboratory tests, the galvanized and aluminum posts that are used in solar facility construction are proven to have no adverse effect on the soil.

Solar panels do not leach any chemicals and do not create any pollutants of any sort. When paired with the planting of native grasses and pollinators, solar facilities will stabilize the land over the life of the project, giving the land time to recover from previous uses so it can then be more suitable for future agriculture purposes.

Service Life of Galvanized Steel in Soil Applications



HIGH CHLORIDES SOIL > 20 PPM



LOW CHLORIDES SOIL <20 PPM

Solar panels do not create any pollutants of any sort within the soil they are installed in

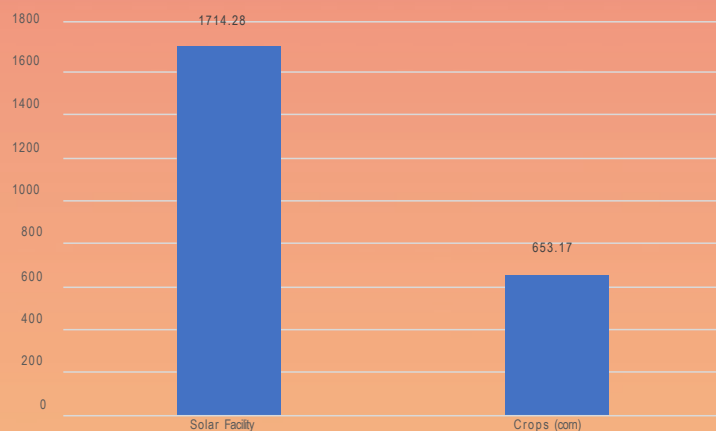
Solar installations function in a harmonious manner with the surrounding landscape. These facilities use no pesticides or fertilizers and do not emit any gas or generate pollution. By planting native grasses and pollinators and allowing the soil time to recover from agriculture practices, the soil quality will improve dramatically over time. The tenure of the solar facility allows essential biodiversity to get back to work on the soil. Perennials and micro-organisms will ensure good organic soil quality for the future. Numerous studies are now available to confirm these intuitive facts.



Carbon offsets. Solar vs Crops

Science shows us that solar panels turn sunlight into electricity without pollution or producing CO2 emissions. Crops, trees, and plants absorb CO2 during their growth. If solar does not produce CO2 and vegetation absorbs the CO2, which is better for the environment? A study by Oregon State University shows that solar wins. On 40 acres of land, a solar facility can produce 7.5 GWh of energy which displaces 1,714.28 tons of CO2 per year. On the same 40 acres, a crop of corn absorbs 653.17 tons of CO2 each season. Importantly, according to Michigan State University, much of that carbon is eventually returned to the atmosphere as the corn crop residue decomposes or the grain is consumed as feed or burned as biofuel. Ultimately, solar is 262% more effective when it comes to carbon offset.

CO₂ offset: Solar vs Crops (in Tonnes)



Solar Facilities = Biodiversity Havens

Research by the University of Oregon, the University of Dresden, and other reputable sources, show that soil can be improved by planting native grasses and pollinators, effectively giving the soil a chance to rest. The deep roots of the planted native vegetation retain more water than turf grass and gravel during heavy rain events and during periods of drought. They also help retain topsoil and improve the soil health over time.

Maintaining Vegetation with Sheep

Solar facilities come with the added benefit of providing local sheep farmers a new source of revenue and plenty of pasture. Grazing livestock throughout solar facilities prevents overgrowth and shading around panels while offsetting the need for more mechanical maintenance and reducing noise from mowing and associated emissions. A solar facility is the perfect place to graze sheep for local livestock farmers. 'Solar grazing' supports the rural and farm economy.

In the compilation of this information sheet, we have used scientific reports, journals and facts. Inovateus is a solar company and proponent of clean sustainable energy generation, the regeneration of soil and biodiversity and of sustainable local development. For further reading we recommend the Science and Facts section of this publication.

Science & Facts

- "Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process" <https://www.astm.org/Standards/A653>
- "Biodiversity In Crops Decreases Fertilizer Damage To Rivers And Lakes" <https://www.sciencedaily.com/releases/2009/02/090211094033.htm>
- "Solar PV Power Potential is Greatest Over Croplands" <https://www.nature.com/articles/s41598-019-47803-3>
- "Agrivoltaics good for agriculture and panel efficiency" <https://www.pv-magazine.com/2019/08/12/agrivoltaics-good-for-agriculture-and-panel-efficiency>
- "Effects of a glyphosate-based herbicide on soil animal trophic groups and associated ecosystem functioning in a northern agricultural field" <https://www.nature.com/articles/s41598-019-44988-5>
- "Killing two birds with one stone" <https://www.pv-magazine.com/magazine-archive/killing-two-birds-with-one-stone>
- "Solar parks help biodiversity by recreating pre-industrial soil conditions" <https://www.pv-magazine.com/2019/11/21/solar-parks-help-biodiversity-by-recreating-pre-industrial-soil-conditions/>
- "Why more fertiliser harms plant diversity" <https://www.newscientist.com/article/dn17068-why-more-fertiliser-harms-plant-diversity>
- "Blog: How much CO2 pollution do solar panels save?" https://www.ethex.org.uk/how-much-co2-pollution-do-solar-panels-save_479.html
- "An acre of corn not as environmentally valuable as an acre of forest" <https://www.chathamdailynews.ca/2013/03/25/an-acre-of-corn-not-as-environmentally-valuable-as-an-acre-of-forest/wcm/6582e615-10b2-452d-8c63-2c3351dc441e>
- "Satellite Shows High Productivity from U.S. Corn Belt". <https://www.nasa.gov/press/goddard/2014/march/satellite-shows-high-productivity-from-us-corn-belt>
- "Corn fields help clean up and protect the environment" https://www.canr.msu.edu/news/corn_fields_help_clean_up_and_protect_the_environment
- "The EPA says a chemical in Monsanto's weed-killer doesn't cause cancer — but there's compelling evidence the agency is wrong" <https://www.businessinsider.com/glyphosate-cancer-dangers-roundup-epa-2019-5>
- "Installing solar panels on agricultural lands maximizes their efficiency, new study shows" <https://today.oregonstate.edu/news/installing-solar-panels-agricultural-lands-maximizes-their-efficiency-new-study-shows>
- "Greenhouse Gas Equivalencies Calculator" <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results>

