



SOLAR & HUMAN HEALTH

MARCH 2025

Princess City Solar is committed to educating the community by providing regular communication, hosting local office hours, and engaging with the broader Calhoun County and Pocahontas County communities. This newsletter is meant to provide information regarding common questions about solar safety for commercial usage, solar panel composition, and the health advantages of solar over conventional energy generation.

Human Safety and Solar Panels

Modern photovoltaic (PV) solar panels are comprised of solid materials confined behind tempered glass with a metal frame. Panels typically consist of glass, polymer, aluminum, copper, and semiconductor materials that can be recovered and recycled at the end of the operating phase. To provide decades of corrosion-free operation, the solar cells within the panels are encapsulated and protected from air and moisture.¹ Solar arrays are engineered to withstand anticipated weather events like high wind speeds, hail and snow. All equipment is also engineered to meet safety and durability standards. Due to their composition, solar panels do not pose a material risk of toxicity to public health and safety.²

Solar energy facilities complement rural communities by being odorless, quiet, and will not produce harmful byproducts. The Princess City Solar Project will yield only safe, clean, and reliable renewable energy for the local community.

Human Health Advantages and Solar Energy

One of the benefits of a solar generation site is that it doesn't result in air or water pollutants like many other energy generation sources. According to the Environmental Protection Agency's (EPA) Avoided Emissions and Generation Tool, every 100 megawatts of installed solar in Iowa will help the state avoid over 2,000 pounds of particulate matter annually.³ Exposure to such particles can negatively affect both the lungs and heart. Reducing air pollutants can prevent unnecessary health care costs.⁴ According to a study by Harvard's School of Public Health, the Midwest and Mid-Atlantic regions achieve the biggest improvements in public health and the greatest air quality benefits from renewable energy over other parts of the U.S.⁵

Electromagnetic Fields (EMFs)

What are EMFs?

Electromagnetic fields (EMFs) occur from the flow of current through wires or electrical devices that have an electric field produced by voltage. Electromagnetic fields surround anything that uses or carries electricity. They are associated with the production and distribution of electricity and can be produced through natural and human-made sources – refrigerators, coffee makers, microwaves, solar energy facilities, the sun, fire, lightning, and a multitude of other items.⁶



EMFs and Solar Energy

Considering that a solar array produces and distributes energy, the Princess City Solar Project would be a source of EMFs; however, the Project will not pose any associated health risks because the level of EMFs emitted is extremely low. According to a study conducted by the National Renewable Energy Laboratory (NREL), EMFs measured at the perimeter of solar PV installations are indistinguishable from background EMFs, and are lower than common household appliances, such as televisions and refrigerators.⁷ Princess City Solar is committed to implementing mitigation measures, such as setbacks from the project footprint and adhering to government regulations, to guarantee safe operations for everyone!



CITATIONS

1. <https://nccleantech.ncsu.edu/wp-content/uploads/2019/10/Health-and-Safety-Impacts-of-Solar-Photovoltaics-PV.pdf>
2. <https://nccleantech.ncsu.edu/wp-content/uploads/2019/10/Health-and-Safety-Impacts-of-Solar-Photovoltaics-PV.pdf>
3. <https://www.epa.gov/avert/avert-web-edition>
4. <https://www.nrel.gov/docs/fy07osti/41998.pdf>
5. <https://hsph.harvard.edu/climate-health-c-change/news/where-to-install-renewable-energy-to-get-the-greatest-climate-and-health-benefits-in-the-u-s/>
6. <https://www.mass.gov/info-details/electromagnetic-fields-or-emf>
7. <https://www.nrel.gov/docs/fy17osti/67440.pdf>



**PRINCESS CITY
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WEDNESDAYS NOON - 4 PM; THURSDAYS 8 AM – NOON;
AND BY APPOINTMENT