

Hazardous Materials¹

Is there a concern about hazardous materials from solar panel systems impacting the soil or water?

PV panels are constructed of silicone, tempered glass, and metals. These components are enclosed and sealed during the manufacturing process. Since the PV panel materials are enclosed and do not mix with water or vaporize into the air, there is little to no risk of chemicals being released into the environment during normal use. Release of any toxic chemicals from solid state inverters is also unlikely as solar installations must conform to state, fire, safety and electric codes, and they pose little or no risk of contaminating the soil or ground water.

Decommissioning²

How are solar panels disposed of after the end of life?

Decommissioning is the process for removing an abandoned solar panel system and remediating the land. NY-Sun's Solar Guidebook provides details on creating a decommissioning plan. When describing requirements for decommissioning sites, it is possible to require the removal of infrastructure, disposal of any components, as well as the stabilization and re-vegetation of the site.

Ambient Temperature¹

Do solar panels create high ambient temperatures in their surroundings?

All available evidence indicates that there is no solar "heat island" effect caused by a functioning solar array. Studies further conclude that the area surrounding a large-scale solar array is unlikely to experience a net heating change from the panels.

Electromagnetic Fields (EMF)³

What about exposure to the EMF caused by solar panel systems?

EMF from solar panel systems are in the same extremely low frequency range as those induced by household appliances. The exposure level is much lower than what may potentially be associated with a health effect and therefore insignificant.

Glare¹

Is glare a concern for solar panel systems?

Solar panels are constructed of dark-colored (usually blue or black) materials and designed with anti-reflective coating(s). In general, solar panels are less reflective than window glass or water surfaces.

Noise

Do solar panel systems generate noise?

Solar panels are noise-free and residential solar inverters are quieter than a refrigerator. Large-scale, ground-mounted systems may have noise associated with the transformers used as part of the utility interconnection. Any sound from the PV equipment is inaudible and sound levels are at background levels from a distance of 50 to 150 feet from the site boundary.

Transformers for Utility Interconnections¹

What are the implications of installing large transformers for connecting solar panel systems to the utility grid?

Large-scale solar panel systems have transformers that are similar to the ones used throughout the electricity distribution system. These transformers resemble the size and forms of equipment associated with a large power consumer, such as a shopping mall or a school campus. Transformer coolants containing halogens have some potential for toxic releases, however modern transformers typically use non-toxic coolants and potential releases from these transformers are not expected to present a risk to human health.

Water Impacts^{1, 4}

Will solar panel systems affect the water run off at the site?

Rules are in place to ensure that solar arrays are installed in ways that protect public water supplies, wetlands, and other water resources. Rooftop solar systems have little to no effects on the direction or flow of water. Ground mounted systems offer opportunities to manage water and prevent runoff. Some options include deep rooted vegetation such as "pollinator friendly" grasses and wild flowers, pervious pavement, or topographical features such as berms, swales, or retention ponds. The Department of Environmental Conservation's State Pollutant Discharge Elimination System (SPDES) website details permit requirements for storm water discharges.⁴

¹ "Clean Energy Results, Questions and Answers, Ground Mounted Solar Photovoltaic Systems." Energy Center, June 2015. <http://www.mass.gov/eea/docs/doer/renewables/solar/solar-pv-guide.pdf>

² "Solar Guidebook For Local Governments/ Decommissioning of Solar" <https://www.nyserda.ny.gov/All-Programs/Programs/NY-Sun/Communities/Local-Government-Training-and-Resources/Solar-Guidebook-for-Local-Governments>

³ "Electromagnetic Fields Associated with Commercial Solar Photovoltaic Power Generating Facilities" US National Library of Medicine National Institutes of Health <https://www.ncbi.nlm.nih.gov/pubmed/26023811>

⁴ State Pollutant Discharge Elimination System (SPDES) website <https://www.dec.ny.gov/chemical/43133.htm>.