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Do Solar Farms Create Heat Islands?

Understanding Heat Impacts at a 5 MW Solar Project in Illinois

Localized Effects Only — No Heat Detected at 150 Feet

Research has shown that any minor heat changes associated with solar panels are highly localized, typically within 0–10 feet above or below the panels.

By the time you are 150 feet away (≈45 meters):

- - No statistically significant increase in air temperature
- - Surface and ambient temperatures are indistinguishable from surrounding rural areas
- - Any difference is within natural variation caused by sunlight, shade, and wind

Why You Won't Feel a Heat Island in Illinois

There is no credible scientific evidence that anyone 150 feet from a solar facility in Illinois would experience discomfort, noticeable temperature changes, or a "heat island" effect — even during the hottest part of the day.

Natural Cooling Factors at Work

- - Vegetation under and around the panels cools the site through evapotranspiration
- - Humidity, cloud cover, and grass cover help dissipate any retained heat quickly
- - Local farming practices typically preserve or replant ground cover under panels

Why Arizona Studies Show More Heat — Why That Doesn't Apply Here

Arizona (32 MW site)	Illinois (5 MW site)
Arid climate, bare desert ground	Humid climate, vegetated farmland
Low moisture — less natural cooling	High vegetation — natural cooling from plants
Native vegetation often removed	Vegetation often retained or replanted
Heat island faded by ~30 meters (98 feet)	No heat island at 150 feet
Larger site size → more retained heat	Smaller site (5 MW) → less thermal mass

Bottom Line

For a neighbor 150 feet away from a 5 MW solar farm in Illinois:

There is no scientifically valid reason to expect any noticeable heat, discomfort, or environmental warming.