

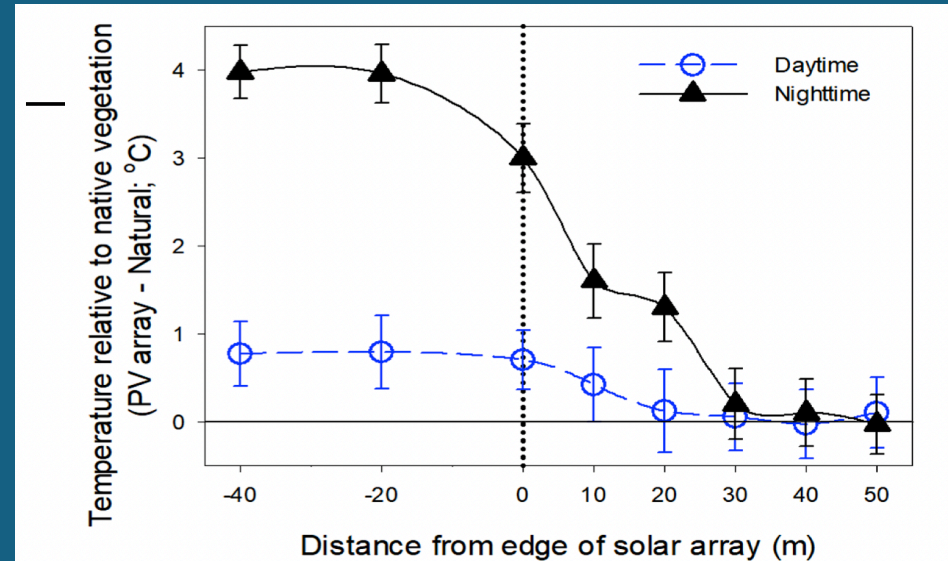
# Solar does NOT increase nearby temperatures

## University of Arizona has studied this exact question

- *Professor Greg Baron-Gafford: School of Geography, Development & Environment*
- *Director of Food, Energy and Water Resilience Solutions, Biosphere 2*
- *No increase in temperature measurable 30 meters (100 feet) from edge of panels*



Locations of additional measures of air temperature are marked with yellow triangles. Stations were placed inside the array at 20m and 40m in from the edge of the array, at the edge of the array (0m), and outside the array at 10, 20, 30, 40, and 50m out from the edge of the array to quantify the spatial extent of the PVHI effect.



Measures of air temperature within (negative values on the X-axis) and outside of the PV array (positive values on the X-axis) were used to quantify the spatial extent of the PVHI effect. The dotted line represents the edge of the PV array. The solid line at 0 on the Y-axis illustrates when there is no difference between a measurement along the transect and ambient air temperatures over native vegetation. At night, the PVHI effect of 3-4°C directly above the solar panels is reduced to 1.5°C at 10m and to 0°C at 30m. There is a lesser PVHI effect by day.

# Myth: Solar/batteries are a toxic fire risk

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## Reality (solar):

- Solar panels are made of materials like glass, aluminum, copper, and semiconductors commonly found in household appliances and technology.
- In the U.S., the two most used solar cells—Crystalline Silicon (c-Si) at 62%<sup>1</sup> of current installations, with Thin Film Cadmium Telluride (CdTe) making up the majority of the remaining market—do not pose a danger to human health or the environment.
- Testing shows that both c-Si and CdTe panels are safe in worst-case conditions of abandonment or damage in a disaster.

Source Link: [Solar Source](#)

# Myth: Solar/batteries are a toxic fire risk

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## Reality (battery):

- Fires are rare and can be managed without endangering broader communities. Gases emitted can be likened to that of plastics fires involving materials such as sofas, mattresses, or office furniture as stated in a study for the New York State Energy Research & Development Authority.

Source Link: [Battery Source](#)

# Myth: Solar is produced in Arizona to mostly benefit California

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## Reality:

- Solar and battery storage projects in Arizona serve local energy needs, reduce greenhouse gas emissions, and improve grid reliability.
- These projects are vital for all Arizona utilities, supplying essential energy generation capacity.
- They help manage increasing energy demand and ensure grid stability.
- Due to significant growth in Pinal and Maricopa Counties, more resources are required.
- Utility-scale solar and battery storage play a critical role in meeting customer demand and preventing outages in the state.

[Click Here](#) for more information

# Myth: Solar is not compatible with residential development

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## Reality:

- Solar projects are great neighbors as they are quiet, do not create any pollution, do not increase traffic in the way another commercial development might. It also protects the land for future agricultural use.
- Additionally, future residential development in the area will increase energy demand and this project will help meet that demand to keep the lights on in Arizona.

# Myth: Solar and Energy Storage Project Pay Little to No Taxes

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## Reality:

- Solar and Energy Storage Projects pay property taxes for the life of the project.
- There is no exemption for property taxes under Arizona Law for solar or energy storage property.
- Equipment is assessed by the Arizona Department of Revenue (ADOR)
- Land is assessed by the county assessor's office
- Both equipment and land taxes are paid to the county where the project is located
- There also could be a Special District Tax – depending on the area

## Additional Resources:

[A.R.S. §42-11001\(6\)](#)

[A.R.S. §42-14155](#)



# Myth: A utility-scale solar facility can create a “heat island”

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## Reality:

- Like any structure, solar panels raise the temperature immediately around them by a few degrees while the sun is shining on them, but temperatures quickly return to normal as you move away from the panels themselves.
- While solar panels are warm to the touch like any surface in direct sunlight, they return to ambient temperatures at night. Panel spacing and the vegetation below and around the panels help maintain ambient temperatures.

## Source Links:

[Barron-Gafford, G. A. et al. 2016. Scientific Reports. The Photovoltaic Heat Island Effect: Larger Solar Power Plants Increase Local Temperatures. Vol. 6, Article No. 35070.](#)

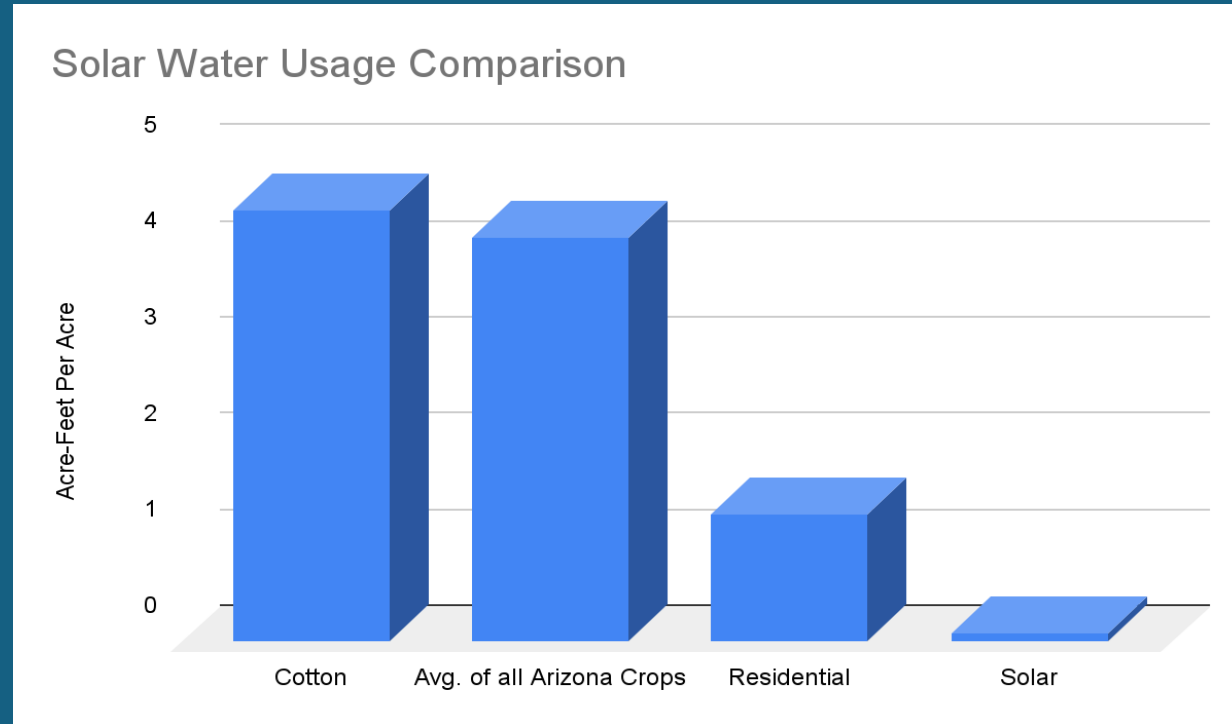
[Masson, V. et al. 2014. Frontiers in Environmental Science. Solar Panels Reduce Both Global Warming and Urban Heat Island. Vol. 2, 14](#)

[Taha, H. 2013. Solar Energy. The Potential for Air-Temperature Impact from Large-Scale Deployment of Solar Photovoltaic Arrays in Urban Areas. Vol. 91](#)

[Binder, G. November 7, 2016. Phys Org. Researchers discover solar heat island effect caused by large-scale solar power plants](#)

# Myth: Solar uses too much water

Reality: Solar generates electricity without using any water



Sources:

<https://economics.arizona.edu/file/719/download?token=g40HRPBT>

<https://economics.arizona.edu/file/719/download?token=g40HRPBT>

<https://www.azwater.gov/news/articles/2021-19-04> (assumes 3.5 houses per acre)

<https://onlinelibrary.wiley.com/doi/full/10.1111/j.1936-704X.2013.03156.x>



# Myth: Solar uses too much water

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## Reality:

- Solar facilities typically require little water during construction or operations, as rainfall is generally sufficient to settle dust and clean the panels.
- Solar energy saves approximately 60 billion gallons of water a year when compared to other power plants because they do not require water for cooling.
- For regions where water access and supply are limited, converting farmland to solar generation for a period of time reduces irrigation needs and saves the community an important resource during operation.
- The vegetation underneath a solar facility can also help retain stormwater and manage runoff.

## Source Links:

[PBS - Fact Check: How Much Water Does Solar Power Really Use?](#)

[SEIA – Water Use Management](#)

[American Clean Power - Solar Energy & Farmland – FAQ](#)

# Myth: Panels leach contaminants into the ground

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## Reality:

- Solar panels are made of materials like glass, aluminum, copper, and semiconductors commonly found in household appliances and technology. Solar panels do not contain sufficient hazardous materials to pose a danger to the environment and human health.
- Solar panels are designed and manufactured to withstand harsh environmental conditions and extreme weather events. These hardened structures protect the solar cells from the elements and support plans to keep the facilities operating for up to 40 years.
- Extended-stress testing and leaching tests reflective of real-world conditions show that solar panels pose little risk of leaching during operation, removal and disposal, including in the event of a natural disaster.

## Source Links:

[American Clean Power - Solar Panels are Safe for Your Community](#)

# Myth: Interference with mobile phone use and 911 calls

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## Reality:

- Battery energy storage systems do not cause disruptions in cellular phone signals.
- Battery energy storage operates within a different frequency range than cellular phone signals.
- In fact, many cellular towers are equipped with battery energy storage as a reliable back-up power in case of disruptions. Battery energy storage is leveraged as a back-up power to maintain essential communications during power disruptions.
- If neighbors experience disruptions in cell service, they should notify their carrier.