



## The Environmental Disaster of Solar Energy

Written by John Hinderaker | August 15, 2019

Solar energy is terrible for the environment in a number of ways, including the fact that large land areas must be devoted to it. At [Forbes](#), Michael Shellenberger highlights another problem with solar energy: it produces vast quantities of hazardous waste, which are not being adequately dealt with.

*The last few years have seen growing concern over what happens to solar panels at the end of their life. Consider the following statements:*

*\* The problem of solar panel disposal “will explode with full force in two or three decades and wreck the environment” because it “is a huge amount of waste and they are not easy to recycle.”*

*\* “The reality is that there is a problem now, and it’s only going to get larger, expanding as rapidly as the PV industry expanded 10 years ago.”*

*\* “Contrary to previous assumptions, pollutants such as lead or carcinogenic cadmium can be almost completely washed out of the fragments of solar modules over a period of several months, for example by rainwater.”*

All of these statements come from solar industry insiders. Cadmium is a particular toxic waste problem:

*The fact that cadmium can be washed out of solar modules by rainwater is increasingly a concern for local environmentalists like the Concerned Citizens of Fawn Lake in Virginia, where a 6,350 acre solar farm to partly power Microsoft data centers is being proposed.*

*“We estimate there are 100,000 pounds of cadmium contained in the 1.8 million panels,” Sean Fogarty of the group told me. “Leaching from broken panels damaged during natural events — hail storms, tornadoes, hurricanes, earthquakes, etc. — and at decommissioning is a big concern.”*

This is how [OSHA](#) describes cadmium:

*Cadmium and its compounds are highly toxic and exposure to this metal is known to cause cancer and targets the body’s cardiovascular, renal, gastrointestinal, neurological, reproductive, and respiratory systems.*

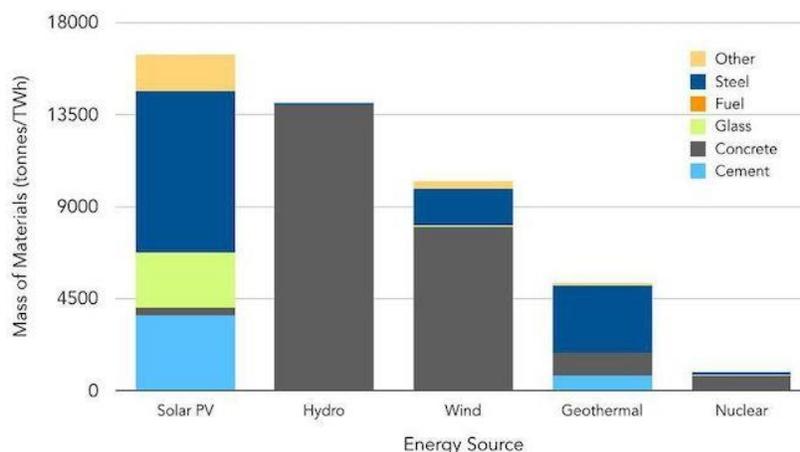


Disposal of decommissioned solar panels in regular landfills is “not recommended in case modules break and toxic materials leach into the soil.” But where do most decommissioned panels go? Landfills. Recycling is often recommended, but is not practical because “recycling costs more than the economic value of the materials recovered, which is why most solar panels end up in landfills.”

Worse, many decommissioned solar panels which were supposed to be properly disposed of are instead labeled “used” and sold to Middle Eastern countries that have no ability to deal with hazardous materials like cadmium.

Some might ask, don’t all sources of energy involve hazardous wastes? Perhaps, but the volume of waste produced by solar panels and wind turbines vastly exceeds that associated with reliable power sources, as this chart shows:

Materials throughput by type of energy source



Sources: DOE Quadrennial Technology Review, Table 10.  
Murray, R.L. and Holbert, K.E. 2015. Nuclear energy: an introduction to the concepts, systems, and applications of nuclear processes (7th ed.). Elsevier.

Solar panels rarely produce electricity—never at night, not much when it is cloudy, and in a Northern climate, not when they are covered with snow and ice. In Minnesota, solar panels produce electricity less than 20 percent of the time. The intractable problem of hazardous waste disposal associated with solar panels is one more reason why they are a terrible investment.