

COMMERCIAL SOLAR PANELS: TO CLEAN OR NOT TO CLEAN?



Close-up of solar panels at Craig Elementary in the Parkway School District. ©Photo by Jerry Naunheim Jr.

by Kim Gasperi

I am often asked by savvy prospective clients, “So, how often will I need to clean my solar panels?” Inevitably the same image pops into my mind: California’s famous neighbors, Bill Nye the Science Guy and Ed Begley, Jr. one-upping one another in their good-natured solar-panel wash-off on HGTV’s “Living with Ed.” As funny as it is to watch, do we really need to go to that kind of trouble here in Missouri?

Calculating Solar Panel Soiling

When we generate a custom energy analysis for our clients, we include all factors that could conceivably cause our commercial solar panels to function below optimum, looking to the National Renewable Energy Laboratory (NREL) for guidance. Utilizing their PV Watts calculator

applications, we are able to make conservative estimates of the energy production for our geographic location based on climatological factors, airborne debris and yes, even bird droppings. All of these factors combined constitute soiling and decrease a photovoltaic panel's ability to produce energy. Therefore, when a Brightergy client receives their energy analysis, it reflects zero cleaning of their solar-panel systems. We're counting on Mother Nature to do the cleaning for us.

Precipitation in Missouri

Due to our location within the U.S. and our relatively flat topography, Missourians receive a healthy dose of precipitation — 34 – 50 inches annually. But is that enough water to do the job? Compare our annual precipitation normals with those of Mountain View, California – location of Google's Headquarters – where they receive 16 – 20 inches annually. Google ran an experiment to determine if they should manually clean their 1.6 MW solar array. What Google found was that the amount of rain they receive is sufficient to cleanse their solar panels and manual cleaning did not significantly increase energy production. If Google's mere 20 inches of annual precipitation does the trick, then Missouri solar arrays are twice as clean.

Determined to Clean Your Solar Panels Anyway?

For those still not convinced that Mother Nature can handle the job, please utilize all safety precautions when working on your roof. It is highly recommended to have a spotter on the ground in case of accident. Solar panels are protected by tempered glass, so you can simply use a garden hose to rinse away debris. If you find you have a difficult stain, use biodegradable dish soap and a soft cloth or brush to loosen, then rinse. There are also solar cleaning kits available online. Keep in mind that you will see an immediate spike in energy production since the cooling water increases the flow of electrons, but that will quickly fall back to the normal production level as the panel returns to ambient temperature.

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