

Don't Regulate Rooftop Solar Without Compelling Cause



Regulating rooftop solar energy systems through municipal zoning ordinances results in fewer people powering their homes and businesses with clean, safe, renewable energy. Furthermore, common arguments for regulation do not hold water.

Pennsylvania municipalities are not required to regulate the installation and operation of rooftop solar energy systems. A municipality can treat a rooftop solar array the same as an electric heat pump—as an accessory to a residential dwelling or commercial building that is not subject to local zoning regulations.

Generally, there is no good reason to regulate rooftop solar energy systems. Municipalities should carefully review their assumptions and the facts before changing their zoning ordinances to regulate rooftop solar. If a municipality has already enacted regulations, there are compelling arguments to remove them.

Ground-mounted systems are a different matter: It likely makes sense for a municipality to subject these systems to the same basic regulations (such as setback requirements) that govern other accessory structures.

Refuting Arguments for Regulation

Opponents of rooftop solar usually attempt to justify regulation (or outright prohibition) of rooftop solar with concerns about glare, aesthetics, and historic preservation. This section explains why those concerns are not well-founded.

Glare

Some claim that solar panels produce serious glare that can be a nuisance for neighbors and passersby.

Science doesn't back this up. Solar panels actually [reflect less light than other common surfaces like steel, glass, and water](#) (after all, the whole point of solar panels is to capture sunlight, not reflect it). If a municipality does not regulate glass surfaces on buildings—and almost none do—why would it regulate solar panels?

Furthermore, the minimal light reflected by most rooftop solar panels (which are far more common in urban and suburban areas than ground-mounted panels) is at a height and angle that can't possibly interfere with the sightlines of neighboring properties. To see glare from rooftop solar panels, a neighbor would have to be at least [one story above the panels](#).

See these resources for more information about why glare from solar panels is largely a non-issue:

- [Assessing Rooftop Solar PV Glare in Dense Urban Residential Neighborhoods](#)
- [PV Systems: Low Levels of Glare and Reflectance vs. Surrounding Environment](#)
- [Evaluation of Glare Potential for Photovoltaic Installations](#)

Aesthetics

Some fear that solar panels will ruin the look of their communities. But this is really just a matter of highly subjective personal taste. What one person sees as an ugly pockmark on their charming neighborhood, another person sees as an attractive roof adornment, and another views as a smart symbol of hope for a safer, cleaner, more sustainable future.

Historic Preservation

Some believe solar panels are incompatible with historic preservation. However, according to the [National Trust for Historic Preservation](#), a leading advocate for historic preservation:

In many cases, **historic buildings, structures, and sites can be preserved while also accommodating solar energy installations.** Indeed, as the need for renewable energy systems increases, technology evolves, political pressure to remove regulatory barriers mounts, and logistical problems are resolved, **precluding the installation of solar**

energy systems may become indefensible [emphasis added].

The Trust's "[Design Guidelines for Solar Installations](#)" outlines best practices for incorporating solar panels into a building while maintaining its historic character. To ensure that rooftop solar installations on historic buildings follow these best practices, a municipality can incorporate these guidelines into the ordinance that designates and regulates historic districts (i.e., a provision could state that rooftop solar panels are allowed in the historic district as long as they meet certain design and installation criteria).

Note: Buildings being preserved in a certain historical condition specifically for educational purposes rather than being actively used as homes or businesses may be a different matter.

Negative Impacts of Regulating Solar

Regulating solar energy systems adds burdensome red tape that makes it more difficult, time-consuming, and [expensive](#) for people to make the switch from fossil fuels to clean, renewable energy—meaning that fewer people will. This has many negative impacts.

Less Reliable Energy

Because the supply and price of fossil fuels are subject to regional and international trade networks, events like natural disasters and wars can trigger devastating shortages and price spikes.

Powering a home or business with solar panels, on the other hand, allows for energy independence and massive cost savings over time. The sun will always shine for free, and the energy it supplies is used locally, largely unaffected by complex trade networks and world events.

More Severe Natural Disasters

Climate change—fueled by greenhouse gas emissions from fossil fuels—is [already wreaking havoc](#), contributing to natural disasters such as [severe storms](#), [prolonged droughts](#), and [raging wildfires](#). In addition to [killing people and destroying communities](#), these disasters take a [massive economic toll](#)—climate

change could reduce the American economy by 10% by century's end. Mitigating the worst of these impacts and ensuring a livable planet for future generations will require a rapid transition to emission-free energy sources—[and time is running out](#).

Dirtier Air and Water

Coal and natural gas production [pollutes the air](#) with greenhouse gases like carbon dioxide and methane, as well as [mercury](#), [lead](#), [particulate matter](#), and other substances damaging to human health. These pollutants are linked to chronic respiratory diseases, impaired childhood development, and heart problems. A [2018 study](#) found that emissions from coal-fired power plants kill hundreds of people and cause tens of thousands of asthma attacks each year, resulting in more than 25,000 missed work and school days.

Extracting and transporting fossil fuels also [pollutes waterways](#) people rely on for drinking and outdoor recreation.

When renewable energy replaces fossil fuels, it saves lives by protecting the air we breathe and water we drink.

Additional Resources

This guide outlines the negative impacts of regulating rooftop solar and the tremendous need for renewable energy, while refuting the common arguments made in favor of regulation. If, however, you are *still* intent on regulating rooftop solar, see [Zoning for Non-Commercial Solar](#) for guidance.

The most recent version of this guide and related resources can be found online at <https://conservationtools.org/guides/164>

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