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Adopt a solar policy for new construction

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NEW ROOFS SHOULD BE BUILT FOR SOLAR

When it comes to reducing pollution and global warming emissions, any rooftop without solar panels is a missed opportunity. Cities can seize that opportunity by requiring that new buildings include solar energy systems. After all, solar energy is most efficient and cost-effective when it is designed into new construction from the start. Some state and local governments have adopted policies that new homes or commercial buildings have solar power, and the idea is spreading rapidly due to its [positive impacts](#):

- Adding solar on all new homes would greatly reduce the need for fossil fuel energy sources and reduce global warming emissions.
- Requiring solar panels on new homes could lower solar energy costs by leading to technological developments, market maturation and increased partnerships between home builders and solar companies. A 2018 National Renewable Energy Laboratory (NREL) study found that these advancements could collectively reduce the price of solar systems by 59 percent.
- A solar homes requirement can work with other energy policies, such as strong efficiency standards, electric vehicle incentives and policies to encourage home energy storage, to build a clean energy system.
- A solar homes policy would also make solar energy the default as your community grows and evolves, ensuring that future progress keeps pace with growth.

CHOOSING THE RIGHT POLICY FOR YOUR COMMUNITY

Requiring solar panels on all new homes will create a surge of distributed solar energy deployment. Cities can also consider variations of this policy, such as requiring solar on buildings of a certain size or on all new construction rather than just homes. Communities that are not ready to require solar panels can instead ensure that every new home and building be “solar ready,” meaning a solar energy system could be easily installed in the future, as a first step.

Pairing a solar homes policy with strong energy efficiency standards for homes can amplify its positive impact. Single-family homes in some U.S. states would need up to 15 kW of solar energy capacity on average to meet current electricity consumption needs. Many roofs cannot host solar systems of that size, so meeting home energy needs with clean energy will require reductions in energy consumption. Strong energy efficiency requirements for buildings and appliances can help achieve that goal.

CASE STUDIES

- **Requiring solar on new homes:** Several cities have adopted policies that all new homes be built with solar panels, including the city of South Miami, Florida. Citing climate threats to the Miami area, from sea level rise and tidal flooding to extreme temperatures, the [local ordinance](#) requires that all new homes be built with solar as a part of the city's goal of eliminating net greenhouse gas emissions by 2030. Specifically, the policy calls for the installation of 2.75 kilowatts of solar per 1000 square feet on new homes, and on existing homes that increase their square footage by 75 percent or more.

After several California cities adopted solar homes policies, California became the first in the country to do so statewide. [The policy](#), which takes effect in 2020, is part of an overhaul of the state's building code that aims to cut energy use in new buildings by 50 percent.
- **Requiring solar on commercial new construction:** The town of Watertown, Massachusetts, adopted a zoning ordinance requiring new commercial and other large properties to have solar panels. The ordinance applies to new or updated commercial buildings larger than 10,000 square feet and new residential buildings ten units or larger.
- **Requiring that new homes be solar ready:** The City of Tucson, Arizona, adopted [an ordinance](#) in 2008 requiring all new single-family homes and duplexes in Tucson to be "solar-ready." A group of stakeholders, including environmental advocates, builders' associations and architects and solar energy installers, developed the policy. The ordinance requires either solar panels and water heating systems or the hardware that would allow those systems to be easily added on all new homes. Tucson is the seat of Pima County, which later adopted a [similar policy](#) in 2018.
- **From a solar homes policy to a net zero policy:** In 2014, the City of Lancaster, California, was the first city to mandate solar on all new buildings. Lancaster, which has a population of about 160,000, later adapted the ordinance to require that all new homes be zero net energy, or able to fully meet their own energy needs with on-site renewable sources. Rooftop arrays must provide two watts of solar energy for every square foot of the building.



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The most efficient and cost-effective time to install solar is during construction.

RESOURCES

- Learn more about the standards adopted by the State of [California](#) and at the local level in [South Miami](#), [Watertown](#), [Tucson](#) and [Lancaster](#).
- Environment America Research and Policy Center's report, [Solar Homes: The Next Step for Clean Energy](#), discusses the potential benefits of solar homes policies if deployed nationwide, and includes policy recommendations for state and local governments.
- Learn more about the [International Energy Conservation Code](#) for buildings and how updating your efficiency codes could amplify a solar homes policy in your state or city.