



Solar on affordable, multi-family housing in Tulare County.



Sunset in the Mojave Desert.

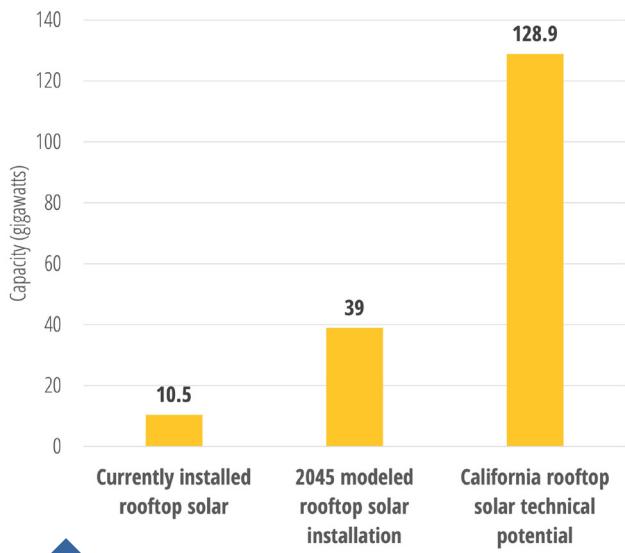
The Environmental Case for Rooftop Solar Energy

Protecting California's climate and land

To meet California's ambitious climate goals, the state will need a huge build-out of renewable energy, which could impact farmland, natural spaces and fragile ecosystems. Rooftop solar will be a critical tool to help California meet its climate goals while minimizing damage to land, conserving water and improving resiliency.

Rooftop solar is essential for meeting California's climate goals

- California has set out to achieve net-zero greenhouse gas emissions and to obtain 100% of retail electricity sales from renewable and zero-carbon sources by 2045.
- State officials assume that California will nearly quadruple current rooftop solar capacity – from 10.5 to 39 gigawatts – and build large amounts of utility-scale solar by 2045.
- California has the technical potential to install almost 129 gigawatts of rooftop solar capacity, more than three times as much as the state agencies model in zero-carbon scenarios for 2045.



Comparing California's current rooftop solar capacity, technical potential and California state agency modeled 2045 capacity.



Solar installation on a Walmart in Mountain View, California.

Rooftop solar can make California more resilient

When paired with energy storage, rooftop solar can help buildings or communities keep the power on during emergencies.

- Californians have experienced numerous climate-related blackouts in recent years, both during pre-emptive power shut-offs and during unprecedented heat waves when electricity demand outstripped supply.
- When battery storage is available, the electricity solar panels generate can be used to power a home even when the rest of the grid loses power, helping preserve food, provide water and keep spaces cool.

Policy recommendations

To meet its climate and clean energy goals, California needs to use a range of policies to support rooftop solar generation, including:

- **Ensuring that the state's revised net metering policy sufficiently supports the continued growth of rooftop solar.** Slower growth of distributed solar creates a risk that the state will not meet its climate and clean energy targets.
- **Accelerating solar energy adoption on affordable and rental housing,** including by allowing financing through utility bills and ensuring that solar owners who pay reduced rates are fully compensated for the power they provide to the grid.
- **Establishing online automated permitting systems for small onsite solar projects** in California cities and counties, using systems like SolarAPP+ developed by the National Renewable Energy Laboratory.



A Joshua tree in Hart's Place, California.

Rooftop solar can help protect California's natural resources

- California's agricultural land, fragile ecosystems and natural spaces can be disrupted or damaged by generation facilities or transmission infrastructure.
- Because it is built on already-developed land, **rooftop solar has no land impacts itself and can reduce the need for higher-impact development.**
- By producing electricity close to where it is consumed, **rooftop solar also reduces the need for new transmission infrastructure** and the impacts that infrastructure has on California's land and ecosystems.
- The amount of new rooftop solar capacity state officials assume California will build by 2045 **reduces the need for utility-scale solar farms that would occupy an area about half the size of the City of Los Angeles.**
- Rooftop solar uses much less water both in installation and while generating electricity than any utility-scale power source, reducing demand on California's extremely limited water supply.



FRONTIER GROUP

Find more information and the full report online:
www.EnvironmentCaliforniaCenter.org

Photos: Front, top to bottom: Spectrum Energy Development; Steve Berardi via Flickr, CC BY-NC-SA 2.0.; Walmart via Flickr, CC BY 2.0.; Rear: sandy.redding via Flickr, CC BY-NC-SA 2.0.