

Lessons from the Solar Leasing Boom in California

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Improving Solar Policy:
Lessons from the Solar Leasing Boom in California
clmtp.lc/17G9anY



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Climate Policy Initiative is a team of analysts and advisors that works to improve the most important energy and land use policies around the world, with a particular focus on finance. We answer pressing questions posed by decision makers through in-depth analysis on what works and what does not.

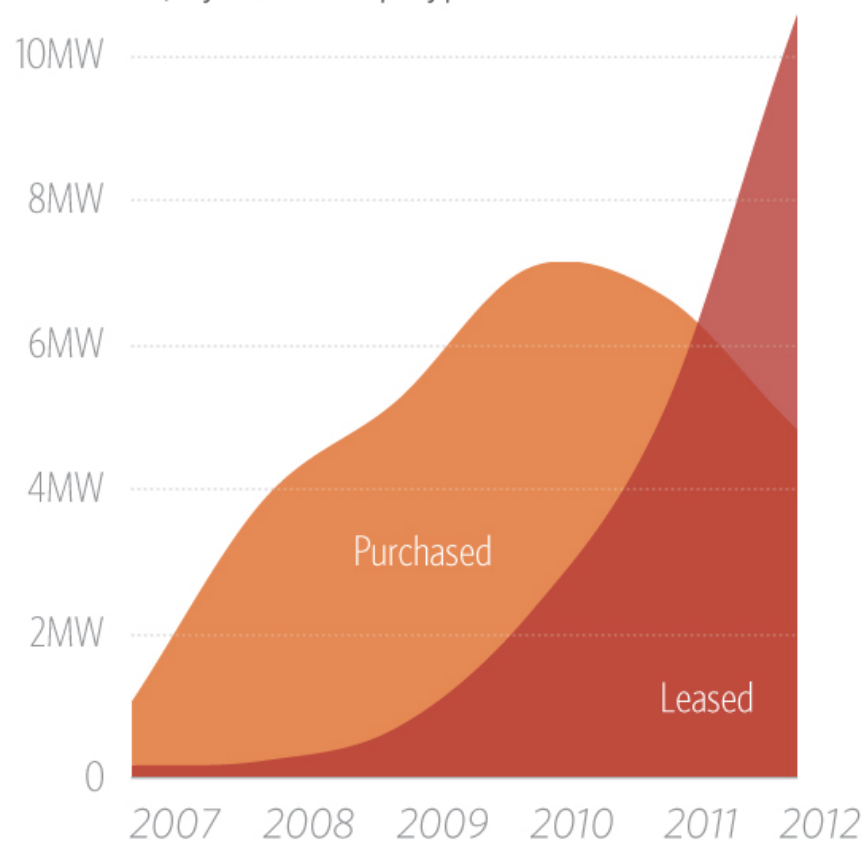
Why California?

- World's 14th largest emitter and 12th largest economy.
- 56% of new U.S. solar deployment (408 MW in Q1 2013).
- About 39% of total U.S. solar capacity (3.322 GW).

What's a solar lease and why is it important?

- A solar lease allows a homeowner to install solar with no down payment and immediate monthly energy bill savings (more on how this works later).
- Solar leasing has been tremendously popular in California, and now significantly outpaces other types of installation.

Annual Deployment of Residential-Scale Solar PV in California, by Ownership Type



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Residential-scale defined as <10 kW. Deployment date is assessed based on the year of CSI Incentive Application Submission Date. Dataset downloaded from CSI website in December 2012. Note that system sizes between leased and owned systems do not differ significantly from one another.

Overview

- Questions
- Our methods
- Findings
 - Policy made rooftop-solar a cost-effective investment in California
 - Leasing converted a cost-effective, but complex, investment into a simple service.
 - Policy helped drive down costs while increasing deployment (leased and otherwise).
 - Policy (unintentionally) helped facilitate a shift toward leases.
- Policy recommendations

Questions

- Why are more people leasing rather than buying?
- How has solar leasing affected taxpayers?
- How has policy affected ownership of solar PV?
- How has policy affected the cost of solar PV?
- What lessons can we draw for state and federal policy?

Methods

- Conversations with solar leasing companies and regulators.
- Financial modeling from investor, developer, and customer perspectives.
- Regression analysis of relationship between policy, leasing, and costs.

Key Findings

1. Why are more people leasing rather than buying?

Leasing converts a cost-effective, but complex, investment into a simple service.

2. How has policy affected the cost of solar PV?

Policy helped drive down costs while increasing deployment (leased and otherwise).

3. How has solar leasing affected taxpayers?

Initially, costs for leased systems (and to taxpayers) were likely slightly higher for leased than purchased systems. However, this difference seems to have vanished.

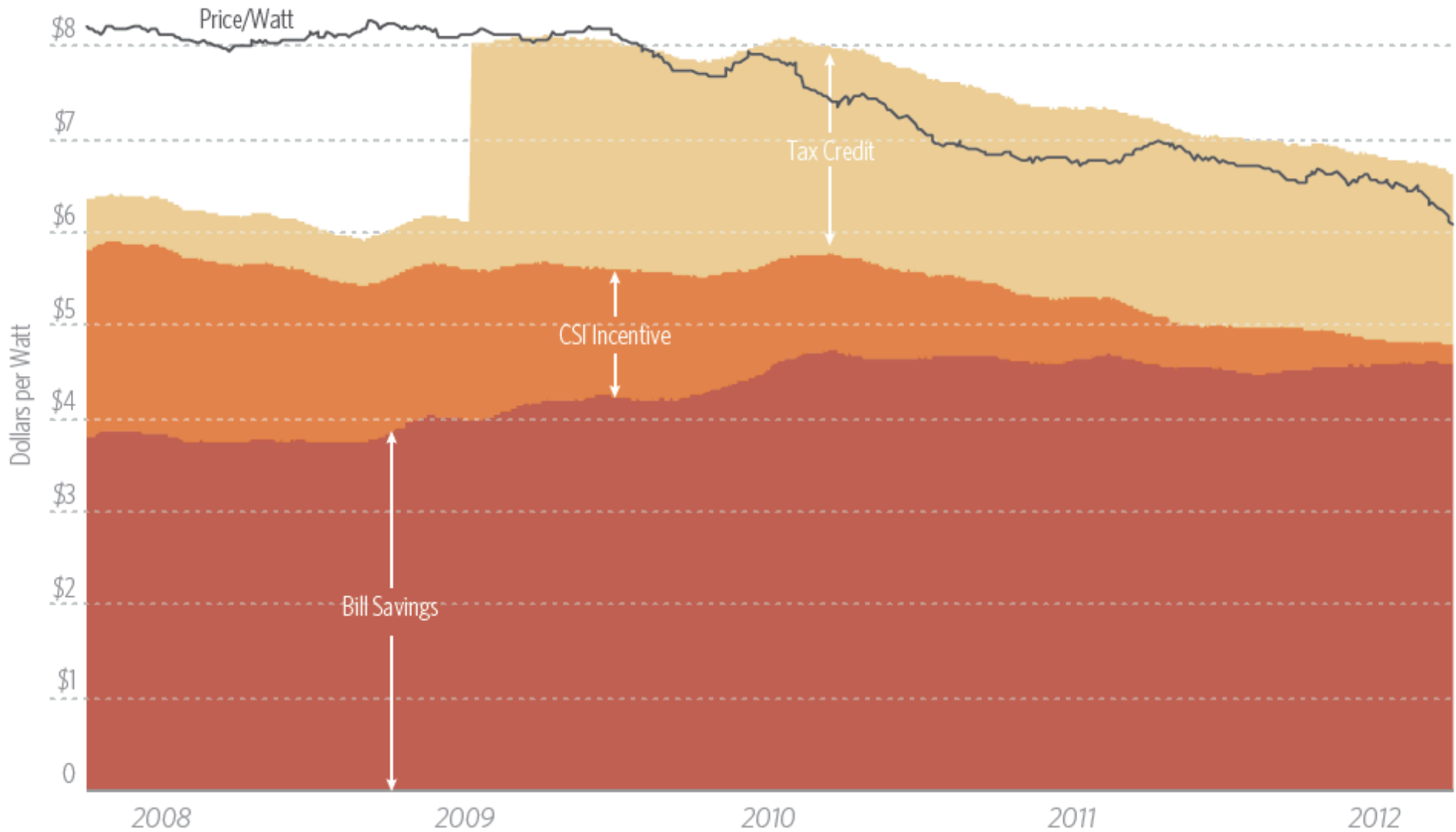
4. How has policy affected ownership of solar PV?

Policy (unintentionally) helped facilitate a shift toward leases.

5. What can state and federal policymakers do for further improvements?

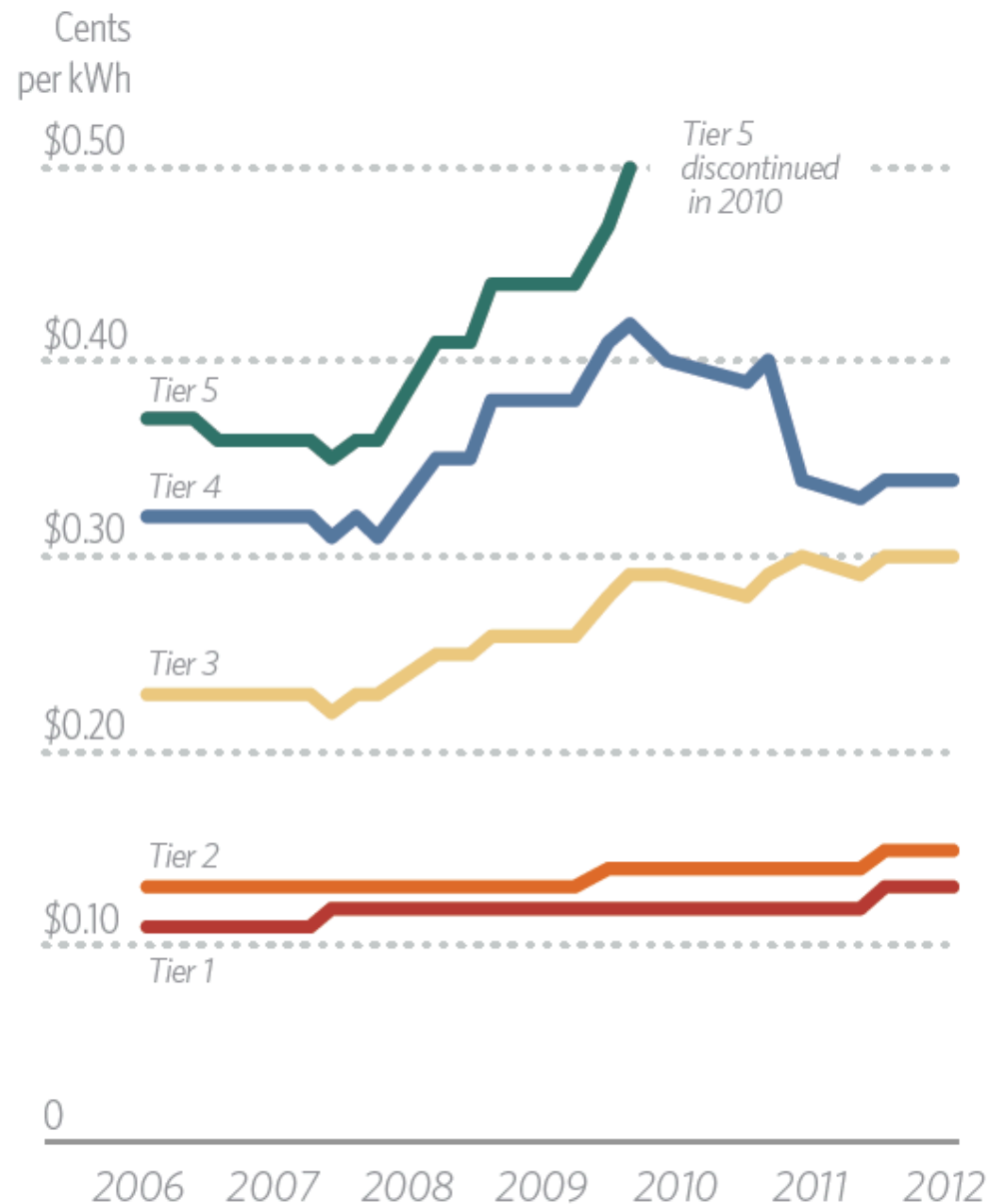
More public data, easier permitting/interconnection, move from tax to cash incentives.

Background: Policy made rooftop solar cost-effective in California



Background: Tiered rates and net metering: crucial to solar leasing's success

- Net metering allows customer to “run their meter backwards.”
- With California’s tiered rate structure (right), this is a substantial incentive for high energy consumers to install solar.
- Top tier in South Africa: ZAR 1.2 ~ USD .0116

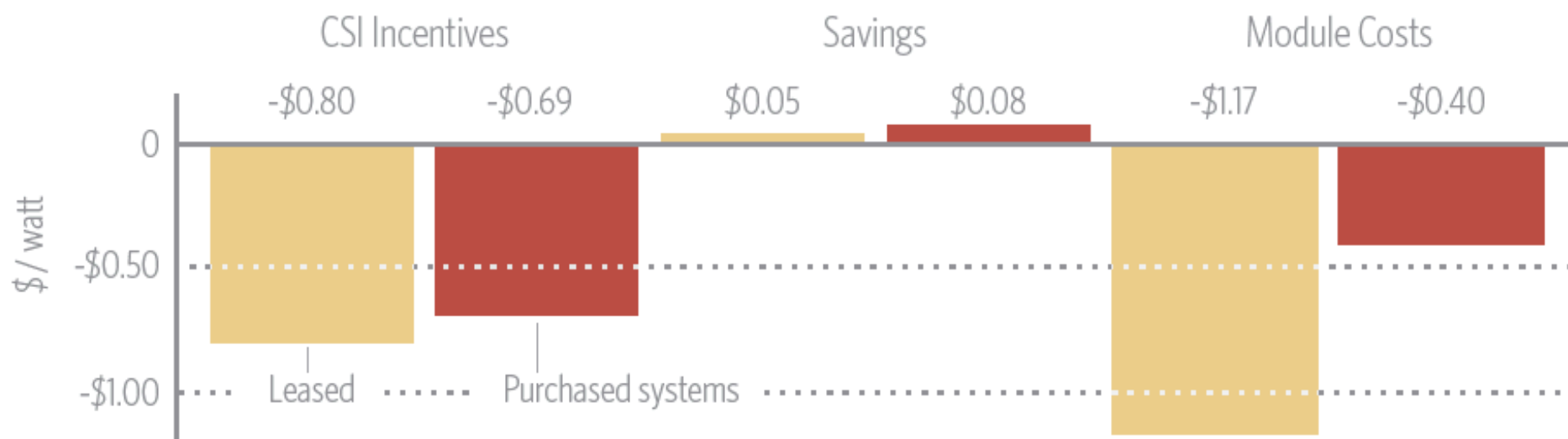


Finding 1: Leasing converts a complex investment into a money-saving service

- By partnering with tax equity investors, leasing companies were able to monetize federal tax credits.
- This mean homeowners no longer had to deal with the paperwork and waiting from tax credits.
- Leasing reduced the effort and eliminated the payback period, and homeowners liked it.

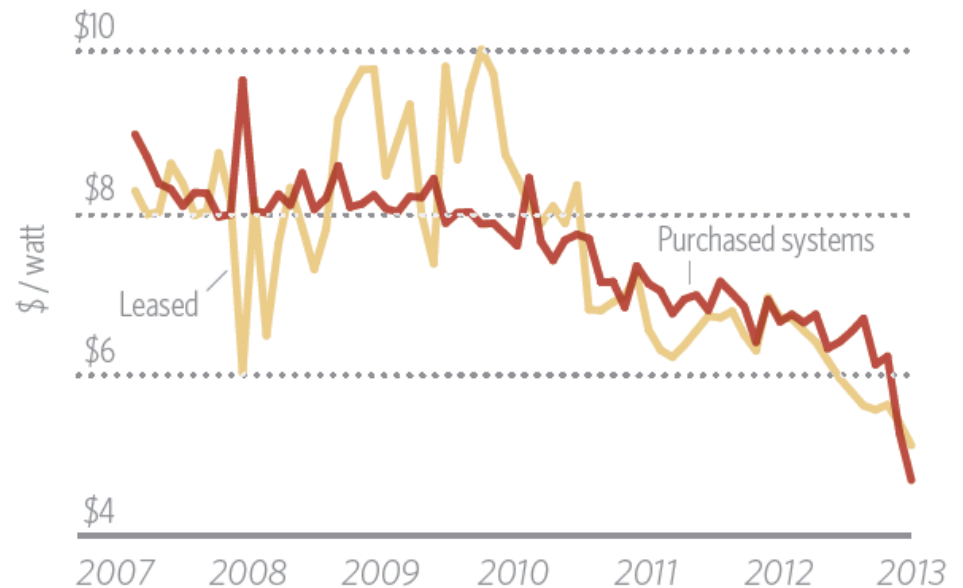
Finding 2: Policy helped drive costs down

- California's tiered rates, net metering policy, and the federal tax credit remained (relatively) constant, but the California Solar Initiative payment fell as deployment increased.
- Lower up-front incentives meant costs had to be cut to maintain deployment.

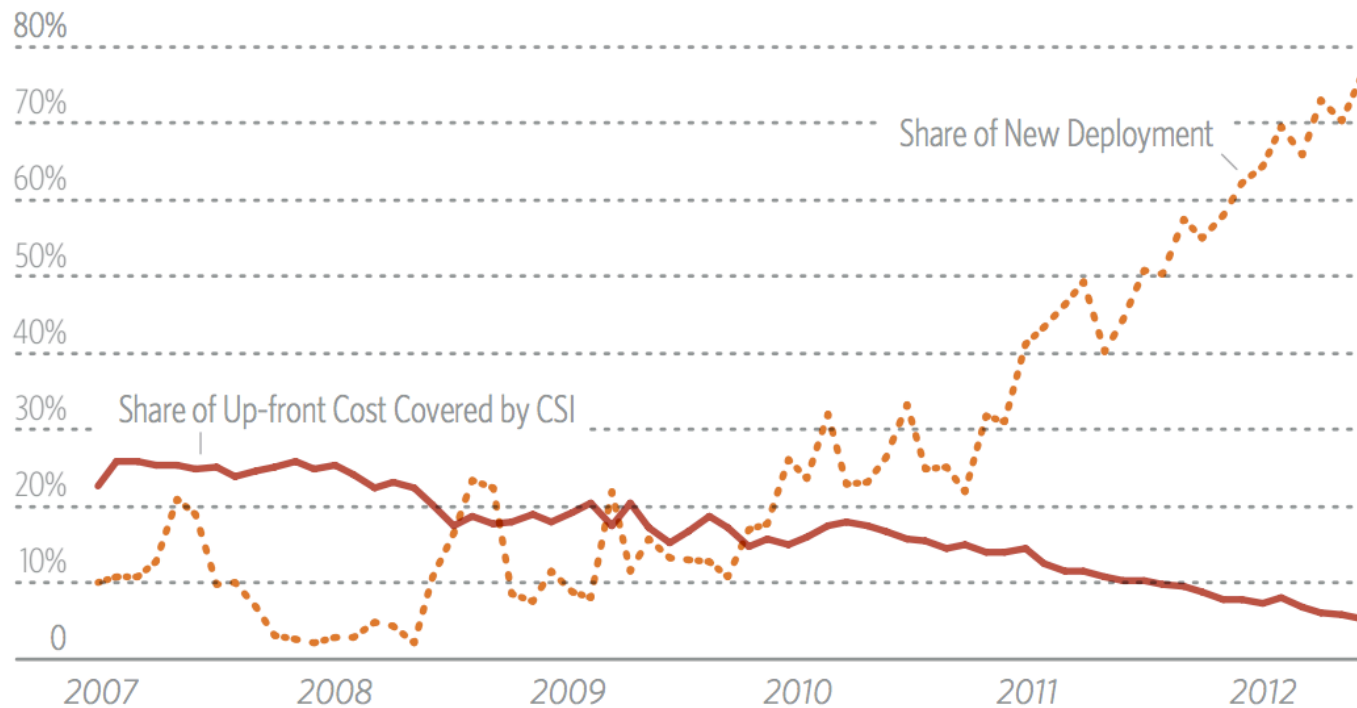


Finding 3: Leasing was briefly expensive for taxpayers, but costs have converged

- Initially, high finance costs led leasing companies to claim larger tax credits.
- Over time, as investors have grown comfortable and competition has increased, this premium seems to have disappeared.



Finding 4: Policy helped facilitate a shift toward leases



As less incentive was delivered up front, more customers chose leasing. Controlling for other factors, we find incentive timing matters.

Finding 5: Recommendations

- We find no reason to prohibit solar leasing.
- Use incentives that decline with deployment to help bring down prices.
- Take steps to reduce the cost of leasing to taxpayers and consumers:
 - Publicly accessible data has been helpful in encouraging competition and transparency.
 - Barriers and delays in permitting and interconnection persist, and must be addressed.
 - Minimize the need for expensive tax equity.

Implications for South Africa

- Net metering has played an important role in scaling up small scale solar in California, and could potentially do the same in South Africa. We have not compared its cost effectiveness to alternatives (e.g. FiTs).
- Since net metering pays for a solar installation over time, customers may prefer finance options that also provide financial benefits over time (e.g. leases or zero-down loans).
- Leasing companies are expanding globally – Australia, Holland... South Africa?

Thank you!

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See the full paper: clmtp.lc/17G9anY

Or visit our website at www.climatepolicyinitiative.org