

ROOFTOP-SOLAR JUSTICE

WHY NET METERING IS GOOD FOR PEOPLE AND THE PLANET
AND WHY MONOPOLY UTILITIES WANT TO KILL IT



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INTRODUCTION

A war over the nation's energy future is raging across the United States. On one side are everyday people who can benefit from clean, renewable energy through distributed-solar projects like rooftop and community solar. On the other side are for-profit electric utilities threatened by distributed solar's impact on their lucrative, guaranteed profits. These companies are using their influence with regulators and legislators in a coordinated effort to undermine the expansion of distributed solar. They recently succeeded in California.

This report addresses the environmental and economic justice of net energy metering, or NEM, and the utility industry's false and self-serving claims against distributed-solar growth.

To combat the climate emergency and pervasive energy inequity, we need to maximize distributed solar development. NEM already exists in many states and is a key policy driver to expand distributed solar. Customers pay only for the net electricity they use each month, considering both the power going to the grid when rooftop-solar systems generate excess electricity and the power coming in from the grid (particularly at night). Net metering substantially reduces electricity bills, allowing people to recoup their distributed-solar investments.

For-profit utilities are fighting NEM on multiple fronts and in many states. In California, for example, they recently convinced regulators to gut net metering for new customers. In Florida a utility-backed bill to gut net metering passed the legislature. Utility companies fight NEM because it undermines their business model, which assumes that centralized utilities are the only legitimate makers and sellers of electricity.

As this report shows, anti-net-metering talking points are based on an outdated version of the grid, where for-profit utilities control everything. Utilities want to gut net metering to maintain control and use the proceeds to pay for rising utility costs, including the growing costs of addressing climate-fueled catastrophes and stranded assets in fossil fuel infrastructure.

EXECUTIVE SUMMARY

The climate emergency demands a rapid and just transition to a fossil-free energy grid. This should include millions of rooftop and similar solar installations on homes, buildings and other available areas.¹ As electric car and all-electric building growth maintain demand for electricity, distributed solar will be vital for a stronger and more affordable grid.² It will reduce the need for utility infrastructure by bringing more pollution-free renewables online, while also improving resiliency and reliability and adding jobs and value to communities.³ These benefits are particularly relevant for environmental justice communities, which face both higher energy burdens and disproportionate harms from the fossil fuel economy.⁴

Net energy metering (NEM) drives distributed solar expansion by catalyzing private investment in new projects. Corporate electric utilities make their profits building infrastructure like power plants and transmission lines. The more their customers can rely on self-generation, the less money utilities make.

This report outlines the benefits of distributed solar to people, the grid and the planet. It shows:

- Net metering's critical role in expanding distributed solar to low-income communities, lowering other utility costs, improving grid resilience and reliability, and bringing jobs to communities harmed first and worst by the climate crisis.
- Why for-profit utilities fight distributed solar and net metering, and what's at stake if they win.
- How utilities' false claims about net metering put shareholders first and ratepayers last.
- The best policy options to protect all consumers during the clean energy transition.

Billions of dollars are available for renewable energy investment under the Inflation Reduction Act,⁵ and utilities are trying to prevent those funds from flowing to distributed energy. These companies use their influence to advance regulations and legislation that will protect their profits; they especially fight initiatives that would help people generate their own electricity.⁶

Utilities earn enormous guaranteed profits and also disconnect millions of customers who cannot afford to pay their electric bills.⁷ The same companies claim to be concerned with the wellbeing of their customers when they argue, falsely, that net metering lets distributed solar customers pay less than their fair share for the grid.⁸

Numerous studies disprove this claim.⁹ A recent report from the Department of Energy shows that most of the top states for distributed-solar adoption among disadvantaged communities are states with NEM policies.¹⁰ In addition, many environmental justice organizations support net metering because of the benefits of self-generated electricity.¹¹

Bringing those benefits to as many people as possible, as quickly as possible, is critical to creating a just, resilient, and 100% renewable energy grid. Moderate to high-income households have been more likely to install distributed solar because it frequently requires upfront capital.¹² We need policies that make distributed solar and net metering more accessible to renters and low-income communities through community solar and direct assistance programs.

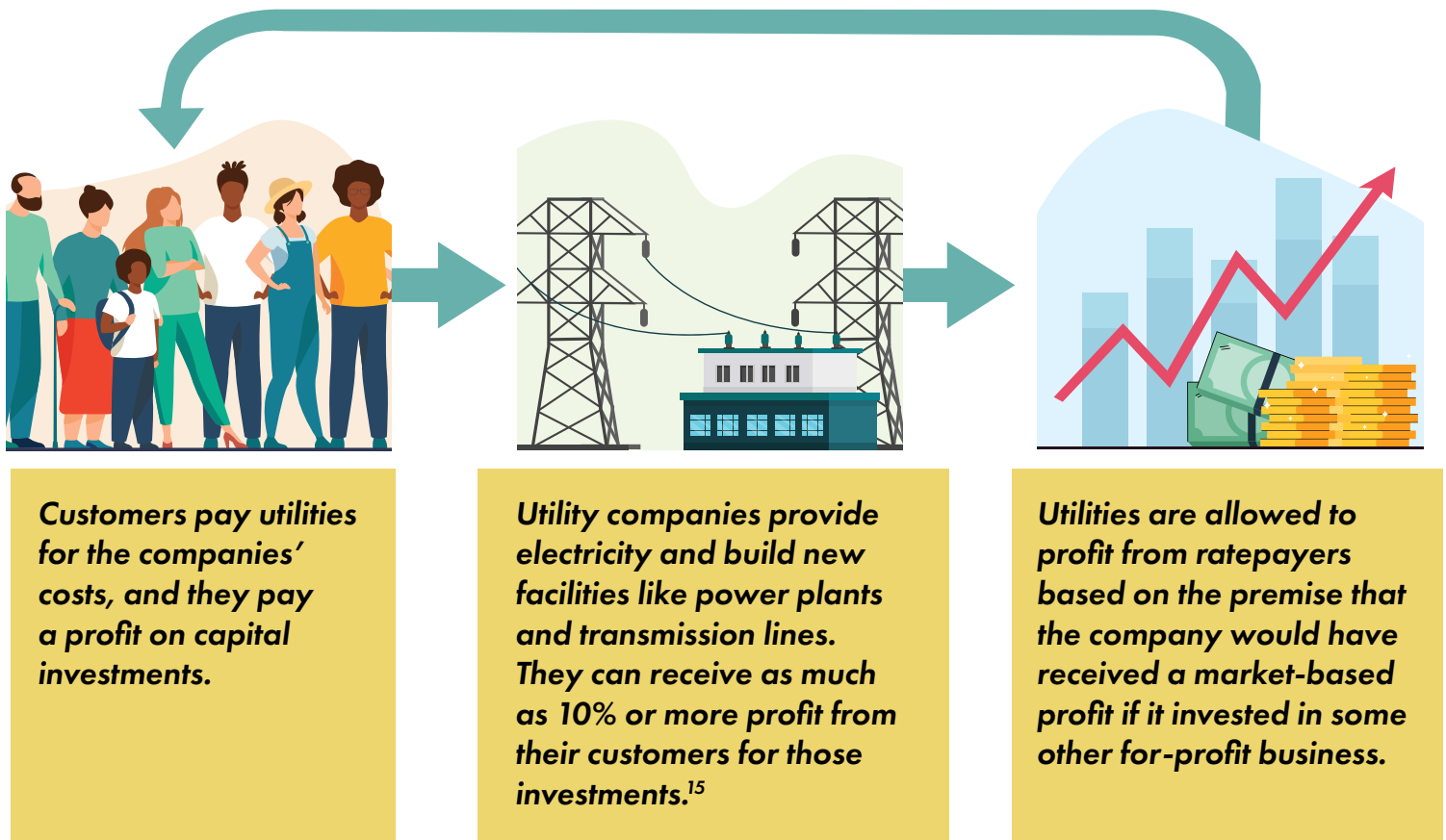
Policymakers should expand NEM, rein in utility costs, and develop properly sited utility-scale renewable energy projects.¹³ These larger projects are necessary to fully replace the destructive, polluting fossil fuel economy, but they must not be a substitute for distributed-solar development. Pairing net metering with the Inflation Reduction Act's rooftop-solar tax credits and community solar project incentives will encourage more of these investments in cities and towns across the country.

HOW UTILITIES MAKE MONEY AND HOW NEM FITS IN

Many of us think of electricity as a government service, and in some areas it is. About 25% of electricity in the United States is generated by “public power” providers — not-for-profit entities owned by municipal governments or the local community.

However, in much of the country, an electric utility is a private company — or, more likely, a subsidiary of a private mega-company — seeking profits for investors. Unlike other for-profit companies, these utilities generally have state-approved monopolies preventing competition, and their rates must be approved by state regulators. Under this system, a utility’s profits come from its customers and are tied to its capital investments. The regulator sets rates to guarantee a profit on capital investments on the grounds that the company would have made those profits another way had it directly invested those funds in another for-profit enterprise.¹⁴

This means utilities always want to build new infrastructure: That’s how they make money.



As demand for centralized utility power grew, and utilities continued building new things, they also continued to profit handsomely. Less demand for the utility’s electricity means fewer new things for them to build, which translates to less profit.

Self-generated electricity, like rooftop solar, and net metering directly threaten corporate utility profits. Utilities want customers to remain dependent on utility-generated power so their investors will continue to receive guaranteed profits from new capital investments.

CORPORATE UTILITIES FIGHT NET METERING

Corporate utilities and their allies have been fighting net metering for years.

- Georgia: Expanding net metering was rejected, limiting participation in rooftop solar.¹⁶
- Nevada: The utility-backed decision to phase out net metering caused such a backlash that the legislature reinstated most of it, reinvigorating the distributed solar industry.¹⁷
- Federal Energy Regulatory Commission: An industry-backed group tried and failed to gut net metering across the country.¹⁸

Today's battles include:¹⁹

- California: State regulators have gutted net metering for new customers.²⁰
- Florida: A Florida Light and Power-backed bill to gut net metering passed the legislature but was vetoed by the governor.²¹
- Arkansas: Newly proposed legislation would end net metering.²²
- North Carolina: The utilities are urging the commission to gut net metering.²³

EXPANDING DISTRIBUTED SOLAR FOR A JUST FUTURE

Generating electricity through distributed-solar development saves customers money. Just like adjusting the thermostat, buying a more efficient appliance or installing insulation, distributed solar lowers utility bills. Net metering adds to this benefit, allowing customers to pay for only the net electricity they use each month.

Self-generated electricity also saves money by lowering other utility costs. As we transition to all-electric buildings, and from traditional cars to electric vehicles, electricity demand will remain strong.²⁴ More reliance on distributed solar will lessen the need for new transmission lines and other centralized power infrastructure. Savings will also come from fewer wildfires and other grid-related accidents.²⁵

Distributed solar, especially when paired with battery storage or micro-grids, is vital to creating a resilient and reliable energy system. Lack of access to air conditioning during heat waves or heat during winter storms, or the inability to run medical equipment or refrigerate medication, can be life-threatening. Communities of color, elderly, disabled and low-income residents are the most vulnerable.²⁶ Widespread power outages are killing customers²⁷ and will only become more frequent as climate change-fueled extreme weather puts ever-greater strains on the grid. Distributed energy can provide essential power even when the centralized grid fails.²⁸

Distributed solar also reduces power plant emissions, which pollute the air and water. This means healthier communities, particularly among disadvantaged communities where fossil fuel plants are often located.²⁹ We'll need fewer central power plants, which means less climate pollution. This is the same pollution fueling the climate emergency and disproportionately harming these same low-income communities and communities of color.³⁰

In planning for the renewable energy future, policymakers tend to focus on massive solar or wind projects in remote locations, which require new transmission lines to bring this power to population centers.³¹ Self-generation through distributed solar can be a force multiplier, fulfilling energy demand that would otherwise come from large-scale projects that can harm biodiversity and wipe out natural carbon sinks.³²

Distributed solar also brings jobs and other economic benefits to the communities where the projects are built — significantly more jobs than utility-scale clean energy and fossil fuel projects.³³ This is one way to help environmental justice communities harmed first and worst by the climate crisis. Bringing jobs and energy resilience to these communities helps begin to redress historical inequities while also replacing the fossil fuel infrastructure that has caused so much harm.

HOW SOLAR AND NET METERING ADVANCE EQUITY

Marginalized communities are most often served by monopoly electric utilities with long histories of harming these communities through polluting facilities, unreliable service, shutoff policies, and climate-harming emissions.³⁴

Self-generation through distributed solar can mitigate all these harms, reducing polluting emissions, lowering costs, and providing resilient backup power in emergencies, particularly when paired with battery-storage technologies.

Distributed-solar projects bring clean energy installation jobs and other local economic opportunities.

Net metering adds to these benefits by increasing savings and incentivizing more distributed-solar projects, including in these marginalized communities that will benefit most from them. This is why the California Energy Commission found net metering instrumental in the success of low-income solar programs.³⁵ It is also why many environmental justice groups support self-generation and net metering.³⁶

The approaches and infrastructure developed in the fossil fuel era no longer work. Centralized power generation is not the best option in the clean energy era. Policymakers need to encourage self-generation of electricity, which NEM helps to do. They should not be discouraging distributed-solar investments by trying to gut net metering.

ADDRESSING THE DISTRIBUTED ENERGY EQUITY CHALLENGE

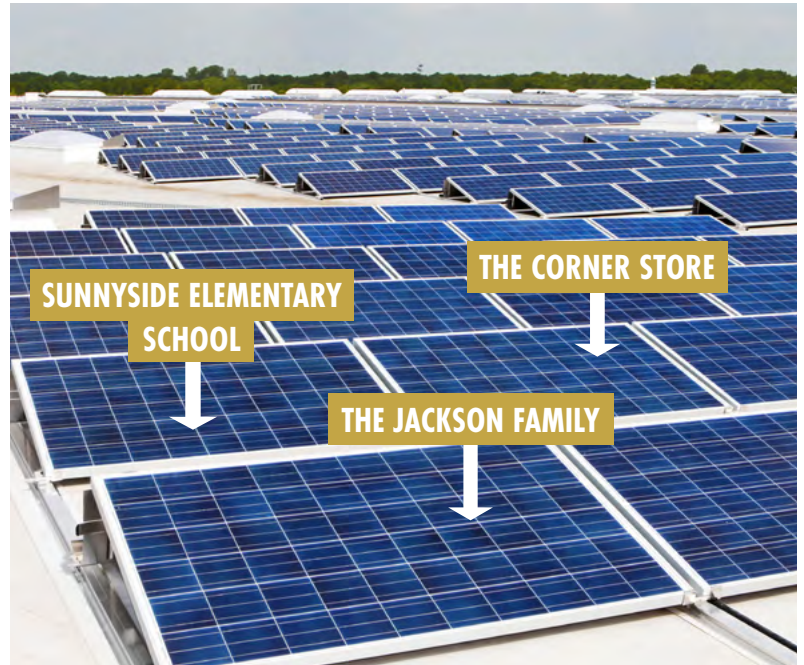
Distributed solar has been more accessible to homeowners than renters — and to those with the means to invest. They can use a home improvement loan to invest in solar panels and apply net-metered savings, where net metering exists, along with other incentives to recoup their investment. In many places they can team up with a solar company that pays for the system in exchange for a portion of the benefits.³⁷

We need smart public policies to make self-generation more broadly accessible. In addition to the incentives in the Inflation Reduction Act,³⁸ this must include state and local government investments in community

solar and related projects, so more homeowners and renters can take advantage of distributed solar near their homes. The California Solar on Multifamily Affordable Housing Program is a great example.³⁹ Policies also should include financial assistance to expand distributed solar to low-income communities that are unable to make these investments, such as the District of Columbia's Solar For All Program.⁴⁰

COMMUNITY SOLAR AND VIRTUAL NET METERING

Net metering is vital for community-solar project participants, who acquire part of a project's solar generation.⁴¹ With virtual net metering, people receive credit on their electricity bills for the power generated by their portion of the community-solar project. This provides the same incentive that makes distributed solar attractive to homeowners.⁴²



Net metering should continue to be a key driver in expanding distributed solar to new communities. As the Department of Energy recently found, most of the top states for distributed-solar adoption among disadvantaged communities have full retail net metering.⁴³ This demonstrates the importance of this policy for bringing distributed-solar benefits to these areas.

Another key element of NEM is its simplicity. Customers pay only for the net electricity used, accounting for both what they have taken from the grid and what they have contributed to it. Other approaches where excess energy is compensated at a lower rate unnecessarily complicate distributed solar, discourage adoption, and undervalue the worth of the electricity sent to the grid.

With the right policies, a broad array of customers will reap the benefits of distributed solar and net metering. This will help people, the grid and the planet.

THE TRUTH ABOUT BIG UTILITIES' 'COST-SHIFT' MYTH

Utilities fight self-generation and NEM for a reason. As net metering and other policies lead to more distributed-solar development, customers will need less utility-provided infrastructure, and for-profit corporate utilities will make less money.

UTILITIES FIGHTING NET METERING ARE DISCONNECTING CUSTOMERS, OBSTRUCTING CLEAN ENERGY, AND MAKING ENORMOUS PROFITS

Utilities claim they oppose net metering because it harms less affluent customers. But as the Center for Biological Diversity, Energy and Policy Institute and BailOut Watch have documented, utilities are disconnecting low-income customers while earning record profits.⁴⁴ Access to electricity is a basic human right, and the United States has given private companies the social license to take away this human right from poor families. These companies also actively fight clean energy initiatives, including through their membership in controversial trade associations.⁴⁵

FLORIDA

- Nearly 1.5 million customers were disconnected in 2020 and 2021.⁴⁶
- Next Era, owner of Florida Power and Light (FPL), paid shareholders more than \$8 billion in 2020-2022.⁴⁷
- FPL used a political consulting firm to oppose a state senator who had been pushing pro-rooftop solar legislation, according to news reports.⁴⁸

NORTH CAROLINA

- More than 150,000 customers were disconnected in 2020 and 2021.⁴⁹
- Duke Energy paid shareholders more than \$8 billion 2020-22.⁵⁰
- Duke has lobbied against clean energy initiatives.⁵¹
- Duke is working to end net metering in North Carolina.⁵²

GEORGIA

- More than 388,000 customers were disconnected in 2021 and 2022.⁵³
- Southern Company (Georgia Power's owner) paid shareholders more than \$7.5 billion in 2020-22.⁵⁴
- Southern Company has reportedly paid more than \$62 million to special interest groups and outside firms involved in campaigns against climate science.⁵⁵
- Georgia Power opposes lifting the Georgia cap on net-metering systems.⁵⁶

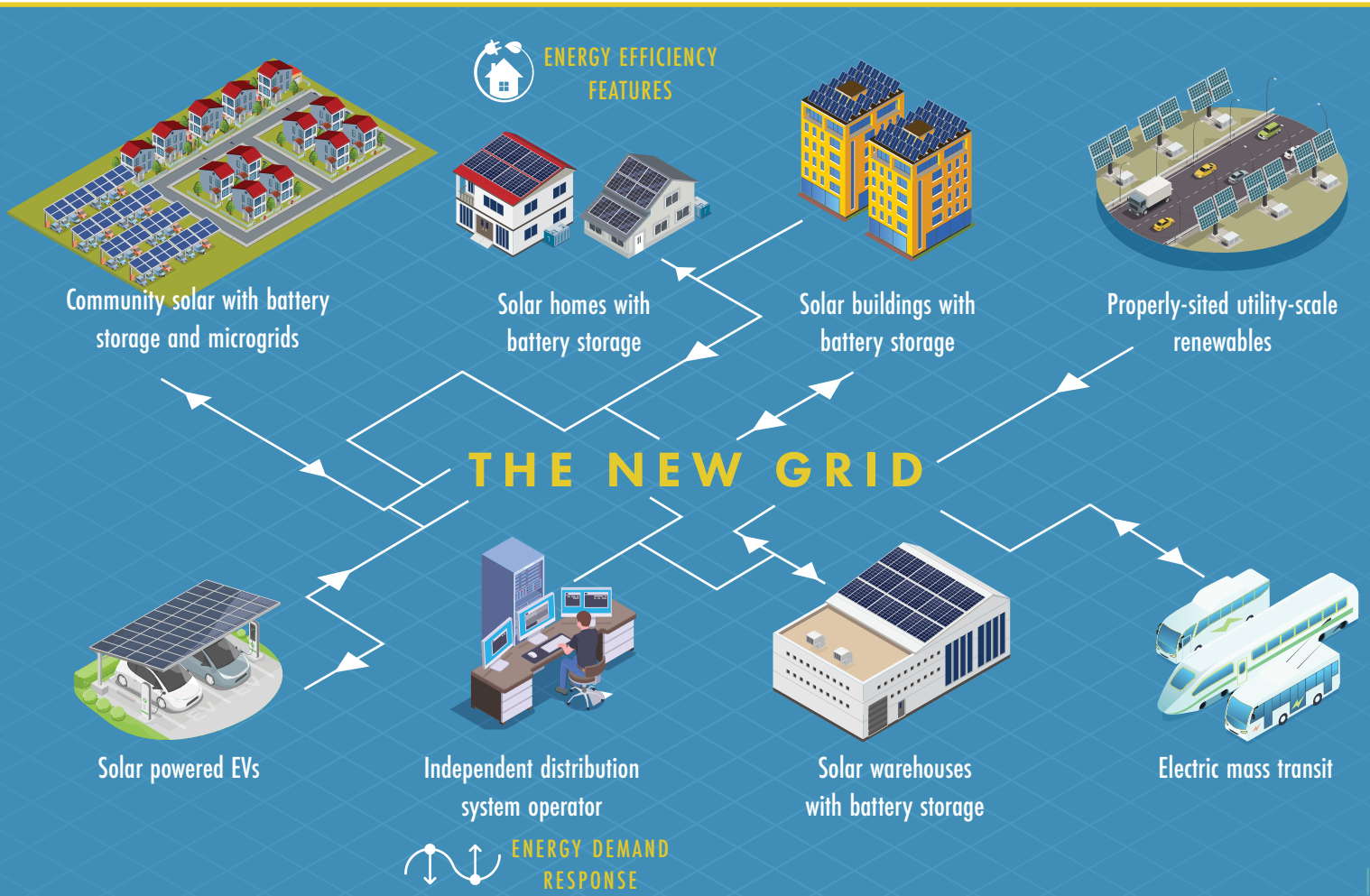
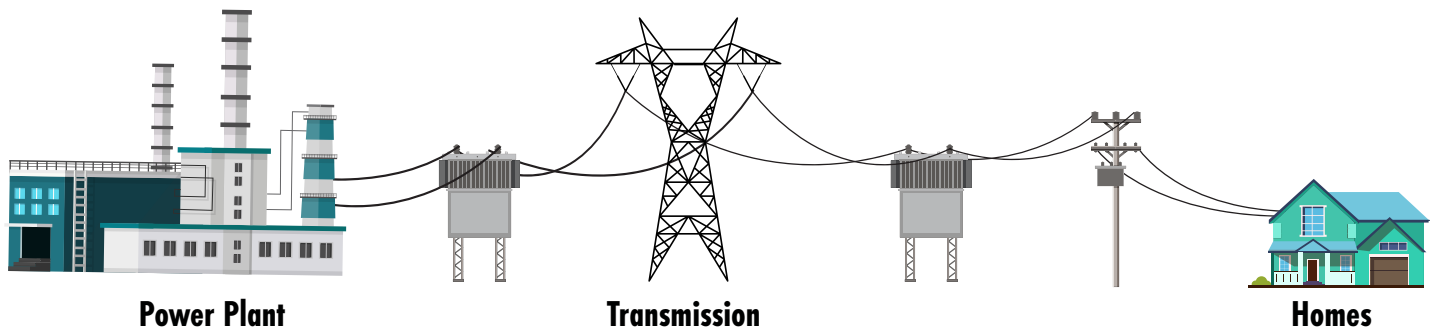
Utilities need a way to undermine net metering, so they've falsely claimed that it creates a "cost-shift" whereby solar owners don't pay their fair share to maintain the grid. The principal problem with this bogus cost-shift theory is that it is premised on the grid of the past, rather than the grid of today and tomorrow.

The grid of the past was a closed system. Only utilities were building electricity infrastructure and providing electricity, and customers were dependent on utilities for everything. In the grid of the past, regulators wanted to spread those utility-only costs among customers.

If you reduced your electricity bill by using energy-efficient insulation, windows or appliances, no one accused you of cheating. Paying your fair share just meant paying for the electricity you used, which the utility supplied.

The cost-shift argument only makes sense in that old world, where the same costs are reallocated among all customers.

THE GRID OF THE PAST



The grid of today — and the grid transformation we urgently need — looks entirely different. It lets everyone contribute to the grid. Now homeowners, businesses and communities can generate their own electricity through distributed solar and related technologies, with all the benefits discussed earlier.

We no longer have a hermetically sealed system that requires a growing utility infrastructure that serves all customers and that all customers must pay for. As we generate more electricity independent of corporate utilities, we'll need less from the utility, which will save everyone money. With more distributed solar we'll need fewer power plants, including dirty fossil fuel plants, and utility-owned and large-scale solar and wind projects. We'll need fewer transmission lines, which will mean fewer wildfires and less damage to communities and ecosystems, as well as fewer costly efforts to put these lines underground.⁵⁷ Fewer transmission lines also means avoiding permitting battles over these projects and losing power from bringing electricity over long distances.⁵⁸ Private-utility executives should be paid less for the smaller system they will manage.

In this new grid, net metering makes perfect sense and is perfectly equitable. It incentivizes more local solar, which benefits everyone with lower costs, more resilience, more jobs and healthier communities. Like the customers of the past who paid less when they invested in home energy efficiency, NEM customers fairly pay for the net electricity they use over the month. The only ones who don't benefit are for-profit utilities addicted to a business model where they only profit by selling us more and more.

The cost-shift myth ignores all this. Relying on the grid of the past, the myth claims solar customers' net-metering savings means they don't pay their fair share of utility costs, shifting costs to benefit the wealthy.

Net-metering opponents argue that self-generated electricity should be compensated at the same wholesale rate utilities pay for centralized power generation.⁵⁹ But this ignores all the benefits of self-generated electricity, which studies show is much more valuable than centralized utility power.⁶⁰ One recent analysis in California showed the lower demand for more transmission lines because of distributed solar was enough to offset the customers' lower utility payments. The study didn't even account for the other benefits of distributed solar.⁶¹

Numerous studies have found that self-generated electricity is worth far more than the electricity that comes from centralized utility systems.⁶²

These studies are confirmed by real-world experience. Net metering has been around for decades, and utilities have long threatened it will explode other customers' bills. That hasn't happened. Most of the states with the highest percentage of solar adoption among disadvantaged communities have full retail net metering.⁶³

The grid of the past only served as our power-delivery system, but the new grid is also vital to addressing the climate emergency. The urgency of transitioning away from fossil fuels will bring new electricity demand as electric car sales increase and homes and buildings become all-electric, including with energy-efficient heat pumps.⁶⁴

If there's a gap between utility costs and funding during the transition away from the utility-owned, fossil fuel-reliant energy system, additional public investment can keep utility prices in check. Utilities should shoulder the costs of their misplaced investments in fossil fuel infrastructure. We must maximize the speed and growth of clean energy. That could require targeted public financing and funding to deploy distributed solar. This is much better public policy than weakening or eliminating net metering, which would increase customer dependence by giving utilities more control and more customer money.

POLICY RECOMMENDATIONS

Regulators should preserve net-metering policies to make distributed solar more affordable and speed the transition to 100% clean, renewable energy. The utility narrative focuses on who is going to pay for their new infrastructure, but policymakers have a duty to ask whether that infrastructure is needed.

State regulators and lawmakers should:

- Preserve and expand net metering programs.
- Provide targeted public financing and funding for distributed energy and community solar.
- Require performance-based ratemaking that rewards utilities for their performance in key metrics, rather than providing them handsome profits for infrastructure investments.⁶⁵
- Mandate integrated resource planning to determine whether and when utilities should build new things and whether there are better alternatives to meet community energy needs.⁶⁶
- Implement energy-efficiency programs, often the most cost-effective energy solution⁶⁷ but frequently undermined by utilities.⁶⁸
- Account for all relevant social costs, including the value of self-generated renewable energy.

To build our clean energy future, distributed-solar projects should be prioritized and maximized, while any utility-scale projects should be properly sited.

Distributed solar brings local jobs and resilient technologies to new communities. Most utility-scale renewable energy generation in remote locations needs to be paired with new transmission lines and loses up to 10% of its power over long distances.⁶⁹ Its costs also often include environmental harms to animals and habitats, along with conflicts with local communities where those lines are sited.⁷⁰

The best way to maximize community benefits and minimize environmental harms is building out as much self-generation as feasible through distributed energy. Net metering is one of the most important tools to make that happen. We need to bring self-generated and affordable electricity to as many homes and communities as possible through rooftop solar and net metering. Doing so will shrink the size of corporate utilities and put the benefits of local renewable energy where they belong — with all of us.



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