

in their own states, from California and Nevada to Florida and New York. And just as during the American Revolution, militia units became stronger when they united with those from other states in the Continental Army, so today, solar homeowners can become much more effective if they unite across states and across party lines.

A modern-day, peaceful Continental Army of solar patriots could go beyond standing up for net metering or against fixed charges in their own state. Such a national alliance of solar patriots could push for much more powerful policies on the national level.

Solar advocacy groups including Vote Solar, Solar United Neighbors, and others listed in Appendix D, bring together solar advocates across states to exchange ideas and share resources to make lobbying in separate states more effective. In a broader approach, Citizens' Climate Lobby leapfrogs past state policy altogether to push for carbon-fee-and-dividend at the federal level, the "killer app" for solar discussed later, in Chapter 10.

Thanks to the rights that the Continental Army won for Americans by force of arms nearly two and a half centuries ago, today's continent-wide army of solar patriots can fight for solar rights using peaceful means. While Washington's army defeated the superior British forces with muskets and rifles, swords and bayonets, and well-placed artillery pieces, so today's army of solar patriots can defeat the powerful forces of monopoly utilities and coal and oil barons with the peaceful weapons of education, referrals, and advocacy.

Eight

ADVOCACY—SUPPORT BETTER
PUBLIC POLICY FOR SOLAR

*Those who expect to reap the blessings
of freedom must, like men, undergo
the fatigue of supporting it.*

—THOMAS PAINE

Now we come to the part of this book that's most oriented towards the government.

In the last couple of chapters, we talked about ways that solar homeowners could help spread solar by talking to their friends, family, neighbors, and others they already know. Here, we're going to talk about how to talk to public officials about rooftop solar.

It's not actually as hard as you might think to approach and make contact with government officials, especially your representatives in Congress and in your state legislature. But to do it right, you'll want to be a bit more organized than when talking with your friends. That will take some planning.

So, to decide if it's worthwhile for you to make the effort, let's start by talking about why the government matters when it comes to spreading solar power.

Why Solar Needs the Government on Its Side

Some people think that the government has no place in helping more Americans to go solar. Homeowners who want to go solar can just do it on their own, right?

They can buy solar panels, get financing to make it affordable, and then sit back and enjoy their clean energy for years to come. This seems like something that could happen entirely within the consumer marketplace, as a transaction between a homeowner and a solar installer. The only other thing that you need is a little cooperation from the local utility company that needs to give permission to hook the solar system up to the electric grid.

Of course, anyone who's gone solar at home already knows that it's not so simple. Buying solar panels is not a

simple consumer transaction for a home improvement like paving your driveway or replacing your gutters.

The main difference with solar is that the government is *already* involved in several different ways. Some of those ways are helpful, making solar cheaper and easier to get and more effective to run once you get it. But sometimes government, especially when it's listening to utility companies, actually does things to slow down the spread of solar.

Let's talk a little bit about how the government, at both the state and federal level, can help or hurt rooftop solar power.

Energy Subsidies

Anyone who's gotten solar power at home knows that government subsidies can cut the price of a solar system by 50 percent or even more. The main subsidy available across the country is the 30 percent Solar Federal Investment Tax Credit, currently scheduled to remain at full force through 2019, after which time it will decline in value and then disappear entirely for homeowners after 2021.

In addition, depending on where you live, many states also offer subsidies for homeowners who go solar. States usually offer two types of incentives. First, states offer

incentives to cut the initial price of a solar installation such as tax credits and exemptions along with direct cash grants and low-interest loans. Second, once a solar system is installed, states may offer other incentives to make solar cheaper to own over the long term such as net energy metering, where solar owners can sell their excess power back to the electric grid at a fair rate, usually the same rate per kilowatt hour that they pay their electric company for power.

Are Solar Incentives Fair?

Is it fair that solar power receives these incentives? And are they necessary for solar to spread?

Critics say that giving incentives to homeowners to get solar is a waste of taxpayer money.

“Solar energy can’t survive without massive subsidies,” according to Benjamin Zycher of the American Enterprise Institute.¹¹ Without incentives, solar would actually be very expensive, this argument goes.

That’s because, so critics claim, solar is not a competitive energy source and America gains little economic benefit from promoting more solar. So, the government should stop subsidizing solar and other clean energy and instead, Americans should let the free market figure out through supply and demand the right price for solar. The government

should not “pick winners” among sources of energy, which just distorts the energy marketplace. “The time has come to allow market forces to work,” Zycher writes.

The thinking here is that without incentives, solar will be so expensive that almost nobody will buy it. Americans who want the lowest-cost electricity will just let their utility choose the cheapest sources of energy. Presumably, critics like Zycher say, as long as solar doesn’t get unfair subsidies that make it artificially cheap compared to conventional energy sources, for years to come utilities will continue to use fossil fuels and nuclear power because they’re naturally the cheapest.

Well, even if that were true, it sounds like a terrible idea.

Abandoning solar would be a disaster both for the environment and for America’s economy in the long run. The Chinese and other leading solar nations will keep installing more solar panels whether America does it or not. In 2015 China became the world’s largest producer of photovoltaic power, with 43 gigawatts of total installed capacity. From 2005 to 2014, production of solar cells in China expanded 100-fold. And as the world’s manufacturing powerhouse, China will keep making cheaper and better solar panels to sell to the rest of the world even if America’s solar manufacturers are forced to close up shop.

More importantly, how much solar depends on subsidies now and whether solar power will need subsidies in

the near future to compete against other energy sources is a matter of debate.

Since prices came down 80 percent on solar panels for home use between 2008 and 2013 according to the GW Solar Institute, and have continued to drop rapidly since then, the United States may now be reaching the point where solar can compete on price against traditional electricity sources even without financial assistance from the government.¹²

This is already the case in states with high electricity prices like Hawaii. In the next five or ten years, as the price of solar continues to decline, solar will be the cheapest source of electricity in more and more parts of the country, starting with California and northeastern states that also have high electricity costs. Ultimately, solar will become so cheap that it will expand into areas like the Southeast that have some of the lowest utility rates in the nation.

Just think about it. If Thomas Paine were around today, he'd call it *common sense*.

That is, common sense tells you that if you have two sources of energy, where one source of energy requires you to keep purchasing fuel (coal, gas, or uranium for nuclear power) and the other source of energy has a fuel that's free of charge (sunlight), then the one with the free fuel will be cheaper, right?

All you need to make it happen is to get the equipment in place. And to get over that initial barrier of constructing

solar arrays across the nation is why solar still needs help from government in the form of incentives.

All Energy Sources Get Subsidies

What people who criticize subsidies for solar power often fail to mention is that all major energy sources in America get government subsidies. That includes coal, oil, natural gas, and nuclear power but also less proven—or even disproven—sources of energy like corn ethanol.

In fact, subsidies for fossil fuels and nuclear power are much higher than those for solar, even when you just consider the direct financial subsidies. Over the period of time they've been subsidized, fossil fuels and nuclear power have gotten many times more subsidies over time than solar has, according to a 2011 study by DBL Investors.¹³

When you average subsidies out over the period that these energy sources have been subsidized, all renewable energy (including solar with wind and others) has cost taxpayers about \$395 million per year. By contrast, nuclear power, subsidized for a much longer period, has averaged \$3.57 billion annually. But the winner by far for government subsidies is oil and gas, getting an average of \$4.91 billion in government subsidies *per year*.

This means that the oil and gas industry alone gets more than ten times the government subsidies given to solar

and all other renewable energy combined. That's a lot of money to support a mature industry that probably hasn't needed help in about a century. That's also a lot of money to give to dirty energy that pumps out greenhouse gases and makes climate change—and human health—worse.

Taxpayer subsidies to oil and gas serve as a way to encourage Americans to use more dirty energy. And why exactly do we want to do that?

“But wait,” as they say on infomercials, “there's more!”

Not only do fossil fuels and nuclear power get direct subsidies including cash payments, tax credits, low interest loans, and subsidized insurance all paid for by taxpayers. But dirty energy companies also get lots of other freebies that American taxpayers have to pay for, whether they know it or not.

If you consider indirect subsidies that make it possible for American consumers to get traditional energy in the first place, then the level of subsidy for fossil fuels and nuclear power goes way up. These include the cost for the U.S. Navy to keep open shipping lanes for oil tankers in the Persian Gulf or decades of federal research on nuclear fission. Then, to be fair, you should add in the cost of pollution from traditional energy, from healthcare bills for kids with asthma who breathe in coal dust to the cost of buying bottled water in communities where water sources have been tainted by chemicals from fracking for natural gas.

Add all those costs up—especially costs from pollution and health impacts¹⁴ combined with costs for the military¹⁵—and a gallon of gasoline could go for \$20 a gallon or more. Meanwhile, if you add in costs from pollution, electricity from coal or natural gas could cost much more than the current national average of 12 cents a kilowatt hour.¹⁶

So, people who complain about energy subsidies should look at the whole picture. And when they do, they'll see that subsidies for solar are small potatoes compared to subsidies for traditional energy. The prize for corporate welfare in America must surely go to fossil fuel and nuclear power companies, the biggest crony capitalists since the days of the Robber Barons in the nineteenth century when railroads and mining companies acquired land out west from the federal government at pennies an acre.

All this is to say that it's the American Way to subsidize energy sources. We do it because we know that affordable energy is crucial to our economy.

In the future, it might be fair to get rid of all energy subsidies, both those for new energy sources like solar and wind but also those for fossil fuels and nuclear power. There are good ideas to do that circulating in political circles today. If you decide to get involved in advocacy, you might want to support one of those proposals.

But until solar is better established and until subsidies for traditional energy are cut, it would be unfair to slash

incentives for solar. In fact, government subsidies should probably be increased *and* extended at least for the next few years while the solar industry continues to mature.

Protecting Utilities from Competition by Rooftop Solar

So, as solar has grown up from a new energy source, government support for solar has been important. As it continues to supply more of America's electricity, and economies of scale help make solar more affordable, solar power won't need as much help from the government to succeed. But what solar still needs and will always need is a level playing field with fossil fuels and nuclear power.

That means the government shouldn't help traditional energy sources more than it helps solar. If anything, government should discourage dirty energy and encourage clean energy to meet America's goals for clean air and water, to help promote a healthier populace, and to help fight climate change. Fair energy policy also means that the government should not do anything to oppose solar or impede its progress.

Unfortunately, the government, both in Washington and in state capitals across the country, continues to offer more help to already successful and prosperous traditional energy companies than it offers to solar. And even worse,

in many cases the government puts up barriers to solar that make it more difficult for families who want solar to afford it.

Why? The reason is clear. State and federal government rules that make solar more expensive or harder to get don't offer any public benefit. Such roadblocks to solar merely act to protect the profits of monopoly electric utilities.

That's why some states make it hard for homeowners to sell their power back to the grid through net metering or to buy solar power from a shared solar array that's not located on their own property by outlawing "community solar" programs.

In response to ratepayer demand or state government mandates, some utilities have reluctantly started to install their own solar generation. Other utilities have started to see the benefits to solar for themselves. In either case, whether utilities want to go solar or if they are forced to go solar, the general approach of utilities to solar power has been to try to keep most of it to themselves, rather than let homeowners do it.

By now, most utilities know that solar is coming and that there's nothing they can do to stop it. So, you might think that utilities would decide that if you can't beat 'em, then you should join 'em. And in a perverse way, that is actually what most utilities are planning these days. They want to transition into solar. But they're usually not interested in getting solar from more homeowners and small

businesses. Instead, utilities' idea of joining the solar revolution is to own the solar arrays themselves and lock out small solar producers. In that way, utilities can maintain their lucrative government-subsidized monopoly over America's electrical power for decades to come.

To provide America more clean energy capacity, any solar is good solar. It's certainly a good thing if utilities install big solar arrays that they can plug into the grid to supply their customers with clean energy. But in order to have a resilient electricity system that can withstand attacks by hackers or terrorists on the one hand or good old fashioned natural disasters on the other hand, centralized generation using solar is not good enough. America also needs distributed solar on rooftops across the country.

Besides, making your own clean energy at home is the right of every American homeowner. Monopoly special interests that try to stop a homeowner from fortifying their castle with solar panels are acting like tyrants who seek to deprive ordinary citizens of their property rights.

To protect our rights to go solar affordably at home and in our small businesses, Americans must stand up for those rights. That's what solar homeowners did in Nevada in 2016 and 2017, when they beat back the lobbying campaign by the monopoly utility NV Energy to destroy net metering and add high fixed monthly charges that discriminated against solar homeowners. That's also what solar supporters did in Florida in the fall of 2016 when they

defeated the utilities' deceptive anti-solar ballot initiative, Amendment 1. Now, anyone who wants more solar must continue to stand up for solar rights in statehouses across the country and in Washington, DC too.

There are many good ideas for public policy that would help spread solar.

For example, the Solar Energy Industries Association offers some good ideas. These include allowing different households to share a single solar array (community solar), making it easier to get permits from local governments and to get a new solar installation connected to the grid, and treating solar owners fairly in terms of payments for electricity, utility rate structures, and even access to the grid. You can find a list of SEIA's recommended policies for rooftop solar in Appendix C at the end of this book.

Changing Public Policy

So, now that you see how important it is that state and federal governments change laws and rules to encourage solar while taking away laws and regulations that slow solar down, what can you do about it?

The way to change laws in our system is to "petition the government for a redress of grievances," as it says in the Constitution. And that means lobbying.

You may not see yourself as a lobbyist. But while there are certainly slick professionals in Washington, DC or in your state capital who fit the stereotype of an attorney in Armani suits handsomely paid by moneyed special interests to work their Rolodex of contacts from the golf course to get VIP access to legislators and their staffs, most people who lobby public officials are actually ordinary citizens.

Pamela Cargill works in the solar industry, and she had never seen herself as a lobbyist until she became one. As a management consultant based in the San Francisco Bay Area, Cargill advises solar installers on how to improve their business. That never involved much contact with government officials until Cargill joined a group from the Solar Energy Industries Association in early 2017 to fly to Washington, DC and meet with new Energy Secretary Rick Perry.

Perry was considering reducing funding for national laboratories that provided research helpful to the solar industry. Also, the department's SunShot Initiative had helped make solar more affordable. Cargill's group was there to make the case for SunShot and to keep the labs open and fully funded.

"We were able to tell some compelling stories of how research from the national labs have been commercialized by some of the companies sitting in the room and how SunShot helped those companies," Cargill told me. "These

were concrete examples of how the Department of Energy is helping make solar more cost competitive and reliable."

Cargill told me how her group of solar industry executives needed to find common ground with Perry, who understood the value of wind power from his time as governor of Texas but knew little about solar power. The group tried to help Perry make that connection and see the value of federal programs to help spread solar power.

As of mid-2017, the SunShot program and the national labs have escaped the worst budget cuts.

Lobbying also worked in Nevada's net metering fight in 2016. There, solar industry professionals were joined by solar homeowners who showed up to public meetings, demonstrated in front of government offices, and called the offices of public officials. And working together with allies from other groups, solar homeowners were successful in saving Nevada's solar industry.

Citizen activism is a model that's worked in fights with utilities over solar in other states, from California to New York. And it will work again in future fights with utilities over solar rights. Indeed, according to experts on government, citizen lobbying is one of the most powerful ways to make change in our society.

"People writing letters, sending emails, attending town hall meetings, visiting lawmakers—they are the dominant influence in legislative outcomes," writes Congressional

expert Bradford Fitch in his *Citizen's Handbook to Influencing Elected Officials*. In writing this informative book, Fitch got unusually close access to members of Congress from both parties. His research showed that, contrary to what you may see on TV, citizens have much more power to get laws changed than special interests do. And that's according to members of Congress themselves. Just take one example from hundreds of interviews that Fitch conducted on Capitol Hill:

"I prioritize everything based on anything that's connected to constituents," said one Republican lawmaker. "I want feedback from the real world," he said.

Likewise, activists who are experienced in lobbying elected officials say the same thing.

"The old adage that politics is local rings true," Tyson Grinstead, the policy director covering the Southeastern U.S. for the national solar installation company Sunrun told me. "Each state has its own local way of phrasing things, so when you have a letter to the editor from someone who's passionate about solar in the community that a legislator recognizes, it means so much more than a phone call from a lobbyist or someone that legislator has met once or twice."

Grinstead thinks that it's not just helpful for solar homeowners to contact government officials about solar—it's essential for real progress. As Grinstead explains,

Utilities have had great practice working within the political system. Lately, we've seen that citizens who are willing to participate can change the outcome of a political fight. It's helped anywhere we've had a campaign, where we've had substantial support from the public. People are asking for choice, to be fairly compensated for the energy they send back to the grid. Those folks are changing the outcomes of those policy battles and helping us to advocate effectively.

To take another example, the bipartisan group Citizens' Climate Lobby has successfully helped to recruit dozens of members of Congress, both Republicans and Democrats, as supporters of solutions to fight climate change. The group's goal is to create "political will for a livable world" and here's how they do it:

Politicians don't create political will, they respond to it. We believe citizens who are well-trained, organized, and with a good system of support can more than influence the political process. We invite

you to live into the opportunity that democracy offers, and in exercising that right as citizens, lift your nation to the task at hand on global warming and climate change, that of protecting our ability to live on planet Earth.

Whether your issue is climate change, energy independence, or personal empowerment, lobbying for solar is all about accepting the invitation that our democratic republic offers to stand up for what you believe in.



FROM THE REVOLUTION: DECLARATION OF INDEPENDENCE

As we've seen, after the British imposed restrictions on trade and immigration, started quartering soldiers in civilian homes, and imposed new taxes from afar, patriot groups expanded across the colonies to coordinate protests against the increasingly heavy hand of British rule. After the British showed that they wouldn't tolerate colonists stockpiling weapons by attacking Lexington and Concord, local patriot groups ousted royal governors in each colony and took control over governments of the new states.

By the spring of 1776, enough colonists were clamoring for independence that the Second Continental Congress was ready to consider the resolution of Richard Henry Lee, delegate of Virginia, "That these united Colonies are, and of right ought to be, free and independent states." Congress appointed a committee including John Adams, Benjamin Franklin, and Thomas Jefferson to flesh out the details of the resolution in writing. After long debate, many edits, and a tense vote, Congress voted for independence on July 4, though the declaration document did not gain all its signatures until August 2.

"When in the course of events, it becomes necessary for one people to dissolve the political bands which have

connected them with another, and to assume among the powers of the earth, the separate and equal station to which the laws of nature and of nature's God entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation.”

So begins one of the most important documents in history and the founding charter of the United States, which goes on to declare that “all men are created equal, that they are endowed by their Creator with certain unalienable rights, that among these are life, liberty and the pursuit of happiness.”

In today's solar revolution, leading advocates for energy freedom have urged rooftop solar owners to declare that their rights to make and use their own energy are unalienable and are equal with those of utilities. For example, Jon Wellinghoff, the former chair of the Federal Energy Regulatory Commission, and Steven Weissman, the associate director of the Center for Law, Energy and the Environment, wrote in a 2015 article in the *Energy Law Journal* that:

Property owners in the United States have the right to generate electricity onsite, for their own use. This understanding is so fundamental that legislatures have not bothered to spell it out. But the right does exist in the law, and it derives both from

common law principles concerning the beneficial use of property and from federal and state laws that imply that property owners can self-generate through encouragement, protection, or facilitation of such activity.

In June 2017, with Wellinghoff's help, Nevada's legislature passed, and Governor Brian Sandoval signed into law, AB 405, which restored net metering but also recognized the rights of citizens to generate their own power and sell extra power back to their utility at the same retail rate that they would have to buy that power. Solar patriots across the country should work to gain this protection in other states and on the federal level in the future.

In the same spirit and written simply and clearly for an audience of solar homeowners and their allies, Solar United Neighbors, the national group for solar homeowners that we learned about in Chapter 4, published a Solar Bill of Rights in 2017. You can find the full text in Appendix B at the end of this book.