How the Walton Family is Threatening Our Clean Energy Future

Stacy Mitchell
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INSTITUTE FOR Local Self-Reliance

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Executive Summary

Critical fights over the future of our energy system are underway in dozens of states, with far-reaching implications for both climate change and our economy. At issue is the recent, rapid expansion of rooftop solar, which is revolutionizing who owns and profits from electricity generation. Rather than power production being monopolized by utilities, more and more households are becoming energy producers themselves. This transition is saving families money and driving the creation of tens of thousands of well-paying jobs.

But rooftop solar threatens the profits of utilities and the companies that supply them with energy. These powerful interests have gone on the offensive and are campaigning to weaken policies that enable rooftop solar in multiple states. They have begun to score wins, including a pivotal victory in Arizona, where regulators granted the state's largest utility, APS, the right to impose new fees on households with rooftop solar. The fees have undermined the economics of rooftop solar, dramatically slowing installations and causing widespread job losses.

While journalists have begun to expose the powerful interests, including the Koch brothers, behind these campaigns, the involvement of another wealthy family — the Waltons, heirs to the Walmart fortune and majority owners of the company's stock — has gone unnoticed. This report finds:

- **Since 2010, the Waltons have donated $4.5 million to more than 20 organizations, including Americans for Prosperity and the Franklin Center for Government and Public Integrity, which are leading the state campaigns against clean energy.**

- **A Walton-owned solar company, First Solar, was instrumental in helping APS win in Arizona, backing the utility even as the rest of the solar industry joined environmental and consumer groups in opposing the new fees. First Solar builds solar arrays for utilities and, as such, stands to benefit if households are blocked from generating their own electricity, even if it means slowing the overall growth of solar. The company is now intervening in a fight over rooftop fees in Nevada and tracking an emerging regulatory debate over rooftop solar in California.**

- **First Solar helped instigate a World Trade Organization proceeding that could force several U.S. states to repeal laws that use solar incentives to spur local job creation. First Solar does most of its manufacturing in Malaysia.**

The findings of this report are significant in part because of what's at stake for our energy system. Rooftop solar offers an enormous opportunity to accelerate the transition to renewable power, broaden the ownership of electricity generation, and create tens of thousands of good jobs. We can't let the Waltons snatch that future from us.

This report also offers an instructive case study of the complexities of contemporary green-washing. For nearly a decade, the Waltons have presented themselves as environmentalists. But as this report, and our previous reports on Walmart's environmental impact, demonstrate, beneath the family's public environmentalism lies a deeper agenda: furthering a highly concentrated, and deeply destructive, corporate economic model. The Waltons' environmentalism is best understood not as a counterpoint to this imperative, but rather as a tool in service to it.

What's at Stake: Clean, Decentralized Energy

Major fights over the future of our electricity system are now brewing in dozens of states. The outcome of these struggles will have critical implications for both climate change and the economic fortunes of ordinary Americans. At their heart, these fights are about clean energy and, in particular, small-scale rooftop solar power systems, which have been proliferating at a breakneck pace. Some 500,000 American households and businesses are now generating their own electricity from rooftop solar panels. Almost half of these systems were installed in the last two years alone.[1] Thanks in part to the growing popularity of homemade electricity — and its increasingly favorable economics — solar power comprised an astonishing 74 percent of all the new generating capacity brought online in the U.S. during the first quarter of 2014.[2]

Rooftop solar is contentious because it's revolutionizing who owns and profits from electricity generation. It's moving the U.S. from a system in which electricity generation is controlled by a small number of investor-owned utilities and toward a future in which households produce energy and reap the financial benefits. During the 25-year lifespan of a residential solar array, for example, a family in Minnesota would earn over $25,000 in savings on their electric bills — and even more if the price of grid electricity rises.[3] Rooftop solar is also driving job creation. Already, the solar industry employs about 143,000 Americans, more than coal mining. Over half of these jobs are in rooftop installation.[4] Installers earn about $24 an hour — more than twice what the average Walmart associate makes.[5]

But while rooftop solar is a boon to average Americans, it is also a threat to electric utilities and the fossil fuel companies that supply them with oil, gas, and coal. Utilities fear large-scale "grid defection" as customers abandon utility-generated power in favor of their own clean energy systems. "For established utilities… this is a disaster," reported *The Economist*.[6] In a jarring 2013 report to its members, the Edison Electric Institute, a trade association of electric utilities, described rooftop solar energy as a "game-changer" for the industry that will shrink revenue and market share "if public policy is not addressed to normalize this competitive threat."[7]

Utilities and fossil fuel interests have heeded that cry and gone on the offensive. They're running campaigns in multiple states to dismantle policies that have enabled the spread of solar power.[8] They have a twofold strategy: reduce the overall growth of renewable energy as much as possible and then ensure that any new solar capacity that connects to the grid is owned by utilities, not households.

Rooftop solar is contentious because it's revolutionizing who owns and profits from electricity generation. "For established utilities… this is a disaster," reports *The Economist*.

This attack on clean energy, which began in earnest last year, has begun to score some wins, including a pivotal — and, utilities hope, precedent-setting — regulatory win in sun-drenched Arizona, ground zero for the spread of rooftop solar. After the state's largest utility, APS, ran a multi-million dollar lobbying and advertising campaign, aided in part by out-of-state groups funded by fossil fuel interests, regulators agreed to allow the utility to impose a monthly fee on customers with rooftop solar. The fee undermines the economics of generating your own power. Since it was imposed, rooftop solar installations in the state have fallen by 40 percent.[9] Arizona is now one of only five states where the number of solar jobs is actually declining.[10] Utilities recently won the go-ahead to impose similar fees in Utah and Oklahoma, and are pursuing them in other states, including California and Nevada, both leading solar states.

Major media outlets – from the *New York Times* to *Scientific American* – have begun to unearth the details of this coordinated, multi-state effort, mapping the various organizations, including the American Legislative Exchange Council (ALEC) and Americans for Prosperity, that are orchestrating the effort, and documenting who's funding them – most notably the billionaire fossil fuel magnates, Charles and David Koch.[11]

The Walton Threat to Our Clean Energy Future

While journalists have begun to track the Koch brothers' role, the involvement of another of America's wealthiest families – the Waltons – has gone unnoticed. The Walton family, which owns a majority of Walmart stock and is worth an estimated $149 billion, also owns First Solar, the world's largest builder of "utility-scale" solar – big solar arrays that supply power to utilities. First Solar played a pivotal role in helping APS win in Arizona. As the rest of the solar industry closed ranks and joined with environmental and consumer groups in opposing the fees, First Solar backed the utility. Bryan Miller, president of the Alliance for Solar Choice, put First Solar's actions in perspective: "No solar company has publicly advocated against solar until First Solar."[12]

Because it does not participate in the residential rooftop market, building utility-scale solar instead, First Solar's interests are closely aligned with those of utilities. Although imposing fees on rooftop systems slows the overall growth of solar, doing so benefits First Solar by reducing competition and ensuring that what solar expansion does occur is concentrated in the utility-scale segment of the market. Utility-scale solar has environmental benefits, but its growth should not come at the expense of rooftop solar, which has both environmental and economic benefits. Indeed, First Solar's model for energy production looks a lot like Walmart's model in retail: highly concentrated ownership with few economic benefits flowing to the rest of us. Where First Solar succeeds– it is now intervening in a fight over rooftop fees in Nevada and tracking an emerging regulatory review of the issue in California – households will be marginalized as energy producers and thousands of installation jobs will be eliminated. The company offers little in return. It has located over 80 percent of its manufacturing jobs in Malaysia.[13] And that's not all: as this report documents, First Solar helped instigate a World Trade Organization (WTO) proceeding that could force several U.S. states to repeal laws that use solar incentives to spur local job creation.

While journalists have begun to track the Koch brothers' role in these campaigns to impede rooftop solar, the involvement of another of America's wealthiest families – the Waltons – has gone unnoticed.

In addition to influencing the future shape of our energy system through First Solar, the Waltons are also long-time funders of many of the organizations that are running campaigns to repeal renewable energy policies and impose fees on households that generate their own power. As this report documents, since 2010, the Waltons have donated $4.5 million to more than 20 organizations, including Americans for Prosperity and the Franklin Center for Government and Public Integrity, that are leading these state campaigns. Many of these groups have long promoted climate change denial and have extensive financial ties to fossil fuel interests.

First Solar, a Walton-owned company that played a key role in helping utilities impede the spread rooftop solar in Arizona, favors a model of energy production that looks a lot like Walmart's model in retail: concentrated ownership, production jobs outsourced overseas, and few economic benefits for local communities

Environmentalism, the Walton Way

For nearly a decade, the Waltons have styled themselves as environmentalists. In 2005, both the Waltons and their flagship enterprise, Walmart, made a highly publicized embrace of environmentalism. Walmart's then-CEO Lee Scott gave a speech in which he announced that the company would become a leader on sustainability.[14] At the same time, the Waltons began giving to environmental causes and taking leadership roles in these organizations. Rob Walton, for example, the family's patriarch and chairman of Walmart for the past 22 years, chairs Conservation International's Executive Committee and has endowed the Rob and Melani Walton Sustainability Solutions Initiatives at Arizona State University.

But beneath the family's public embrace of environmentalism lies a deeper agenda: furthering the highly concentrated corporate economic model that has generated so much wealth for so few, often at extraordinary cost to both the environment and working people. The Waltons' environmentalism is best understood not as a curious counterpoint to this imperative, but rather as a tool in service to it.

Beneath the Walton family's public embrace of environmentalism lies a deeper agenda: furthering a highly concentrated and deeply destructive corporate economic model. The Waltons' environmentalism is best understood not as a curious counterpoint to this imperative, but rather as a tool in service to it.

Nowhere is this more evident than in the family's main business, Walmart. Since 2005, Walmart has made a steady stream of well-publicized announcements about its commitment to sustainability, pledging to take climate change seriously, convert to renewable power, and so on. Today, Walmart is generating more climate pollution than ever.[15] Nine years after promising to switch to 100 percent renewable power, the company derives only 3 percent of its electricity from its wind and solar projects and lags far behind other retailers in moving to renewable energy.[16] While Walmart has made modest improvements in such things as store lighting efficiency, it has refused to rethink any of the core aspects of its business model, no matter how destructive. In tallying its climate footprint, for example, Walmart ignores the massive volume of greenhouse gas pollution it generates shipping goods from far-flung factories.[17] But, in one respect, the company's sustainability campaign has been highly successful. It has improved Walmart's image sufficiently from the low point of 2005 to enable it to resume growing rapidly. Its U.S. operations have expanded 36 percent since then, and it has come to dominate our food system. Walmart now captures one of every four dollars Americans spend on groceries.

The Waltons routinely back politicians who oppose taking action on global warming. During the last election cycle, the Waltons gave 70 percent of their federal contributions to candidates who vote against the environment at least 75 percent of the time.

The Waltons' political donations also reflect the family's preeminent commitment to ensuring that corporations can operate with a free hand. The Waltons routinely back politicians who oppose regulations of any kind, including proposals to address global warming and otherwise curb pollution. During the 2011-2012 election cycle, the Waltons gave 70 percent of their federal contributions to candidates with lifetime scores of 25 or less on the League of Conservation Voters' Scorecard — meaning they vote against the environment at least 75 percent of the time.[18] Some of the family's favorite politicians are leading supporters of fossil fuel interests. Representative Steve Womack, for example, who received $136,200 in donations to his campaign and his political action committee from the Waltons during the 2012 cycle, has signed Americans for Prosperity's "No Climate Tax" pledge, been an outspoken advocate for the Keystone pipeline, and earned the distinction of a 100 percent score from Oil Change International, meaning he always votes with fossil fuel interests.[19]

Even as the Waltons back anti-environment politicians, the family's private foundation has grown into one of the largest funders of environmental organizations in the country. But what may seem like a paradox at first is hardly so on closer inspection. The Walton Family Foundation gives most of its green grants to organizations that work closely with big companies, reinforcing corporations' dominance in our society and validating their sustainability efforts as meaningful solutions to our environmental problems. Indeed, over half of the grants made by the Waltons over the last five years have gone to just four organizations, all of whom partner directly with Walmart.[20] These are the Environmental Defense Fund (EDF), which maintains an office half a mile from Walmart's Arkansas headquarters and regularly produces press releases and media interviews praising Walmart's sustainability initiatives; Conservation International, which also routinely celebrates Walmart's green accomplishments in public statements; Arizona State University's Global Sustainability Institute, which has given academic backing to Walmart's approach to evaluating the impact of products; and the Marine Stewardship Council, which became a Walton grantee the same year it agreed to provide an eco-label for seafood sold at Walmart.

This Report's Findings

The remainder of this report is divided into two sections. The first part documents the Walton money that has gone into the state-by-state campaigns against renewable power broadly and rooftop solar in particular. The second part tells the story of the Waltons' solar company, First Solar, and the fight it waged in Arizona to impede rooftop solar, as well as its efforts to impose similar fees on power-generating households in other states and rollback state laws that require solar companies to create local jobs in order to be eligible for public incentives.

The findings of this report are significant in part because of what's at stake for rooftop solar. It's an enormous opportunity, both for the environment and for our economy. Giving people a financial stake in energy production can accelerate the transition to renewable power. It also offers good jobs that pay twice what fast-food chains and big retailers like Walmart pay. We can't let the Waltons and other elites snatch that future from us.

Giving people a financial stake in energy production can accelerate the transition to renewable power and create thousands of jobs. We can't let the Waltons snatch that future from us.

This report's findings are also significant because the Walton family, and Walmart itself, offer an instructive case study on the complexities of contemporary greenwashing. One advantage of adopting environmentalism as an image-making tool is that there is no concrete accountability. If you claim to be socially responsible, that can be measured by how much you pay your workers and what you do for the communities in which you operate. But being green is largely self-defined. Yes, the Waltons give big grants to environmental organizations and, yes, Walmart has made modest improvements in things like product packaging. But, as the Walton family's efforts to impede rooftop solar and its support of anti-clean energy groups and politicians illustrate, the Waltons' environmentalism is not a step toward transformative change. It's a means of burnishing their own image and growing their retail empire, as well as a broad tool for expanding the power of corporations and wealthy investors.

How the Waltons are Funding the Attack on Clean Energy

Between 2010 and 2013, the Waltons, through their family foundation, gave $4.5 million in grants to 22 national and state think tanks and political groups working to gut clean energy policies (see the appendix for a complete list). The family's support for these groups has been on the rise, with about 40 percent of those dollars dispersed in the last year alone. In the Walton Family Foundation's annual reports, none of these donations are earmarked for running anti-renewable energy campaigns. Some are listed under the category "special initiatives," while others are designated for "education reform." Nevertheless, the Waltons' investments have expanded the capacity and reach of these organizations, making them more formidable across the full range of issues they work on.

Networked nationally and often operating in close partnership with one another, these groups have targeted two state policies that have been instrumental in the spread of renewable energy and rooftop solar: Renewable Portfolio Standards (RPS) and Net Energy Metering (NEM). On the books in about 30 states, RPS policies require utilities to source a share of their electricity from renewable sources, including, in some states, a mandate to buy some of that power from households producing energy via small rooftop solar systems. NEM laws, which 45 states have adopted, require that utilities allow customers with solar systems to feed any excess electricity they produce back into the grid and be paid the going retail rate for it.

The well-funded attack on clean energy is making headway, with states such as Ohio and Kansas moving to dismantle their renewable portfolio standards and net metering policies coming under attack in Arizona, Utah, California, Nevada, and elsewhere.

Widespread and popular in both liberal and conservative states, most of these policies were enacted years ago with large bipartisan majorities. But the well-funded attack on clean energy is beginning to make headway. In May, the Ohio legislature voted overwhelmingly to suspend the state's RPS policy, which was enacted six years ago with virtually no opposition.[21] A bill rolling back RPS has passed the Kansas Senate, despite the fact that the state now derives nearly 20 percent of its power from wind, with much of it generated by farmers.[22] Meanwhile, NEM policies have been weakened in Arizona, Utah, and Oklahoma, and are the subject of fierce regulatory debates in California, Nevada, and elsewhere.

Financing ALEC, Americans for Prosperity, and Other National Groups

A central player in all of this is the American Legislative Exchange Council (ALEC), a secretive network of state lawmakers and big corporations. Its Energy, Environment, and Agriculture Task Force, which is comprised of representatives of electric utilities, as well as large oil and coal companies,[23] drafted and is now moving bills to thwart renewable energy in dozens of states, including legislation to impose fees on households with rooftop solar.[24] John Eick, the Task Force's lead staffer, has characterized solar-generating families as "freeriders on the system."[25] At ALEC's national conference in May, the Task Force organized a lunch, sponsored by the Edison Electric Institute, in which "legislators from Utah and Oklahoma bragged about slowing the development of solar energy in their states," according to Wisconsin Representative

Chris Taylor, who attended. One of the speakers was Oklahoma Senator A.J. Griffin, the lead sponsor of an ALEC-inspired bill enacted this year that opens the way for new fees on Oklahomans with rooftop solar.[26]

ALEC, whose national conference has been sponsored by the Walton Family Foundation, is moving bills to thwart renewable energy in dozens of states, including legislation to impose fees on households with rooftop solar.

Although ALEC is not listed as a grantee in any of the Walton Family Foundation's annual reports, it appears to have received funding from the family nonetheless. In 2011, according to documents leaked from ALEC's national conference, the Walton Family Foundation was listed as a "Chairman" level sponsor of the event, which, according to ALEC's 2010 fee schedule, equated to a $50,000 donation.[27] Whether the Waltons have sponsored other ALEC events or made additional donations to ALEC is not known. There are signs that the family does indeed have close ties to the organization. Two years ago, the Walton Family Foundation recruited Lori Drummer Armistead, a former staffer for ALEC, to serve as a program officer.[28]

The Waltons have also supported ALEC through Walmart. For almost 20 years, from 1993 – shortly after Rob Walton assumed the chairmanship of the company – until 2012, Walmart was a leading member of ALEC, serving on its Private Enterprise Advisory Council and, presumably, paying ALEC's sizable corporate membership fees.[29] Walmart dropped its membership only after intense public pressure mounted over the retailer's involvement in ALEC's "stand your ground" gun laws in the wake of the shooting of Trayvon Martin.

Several other national groups campaigning to overturn clean energy policies are among the Walton Family Foundation's published list of grantees. Topping the list is the American Enterprise Institute (AEI), which has received almost $800,000 from the Waltons since 2010. AEI has published reports and articles attacking clean energy as expensive, infeasible, and, bizarrely, a threat to air quality. AEI argues that states should repeal clean energy policies and instead provide more support for oil and gas. Although there is broad consensus among energy experts that RPS policies result in lower electricity costs by reducing the need to build costly new transmission lines and power plants,[30] AEI has produced its own calculations, which rely on inflated figures for the cost of back-up generation to conclude that solar is astronomically expensive and states should simply burn more coal instead.[31]

Since 2010, the Waltons have made $575,000 in grants to Americans for Prosperity, which has been instrumental in each of the wins so far against clean power.

Another Walton grantee, Americans for Prosperity, has arguably done more than any other organization to block action on climate and thwart the spread of clean energy. Founded by the Koch brothers, AFP works to gin up public opposition to clean energy – or at least the appearance of it. It has used television ads, direct mail, phone calls, and online outreach to spread disinformation about state RPS and NEM policies and their impact on jobs and the environment.[32] AFP has been instrumental in each of the wins so far against clean power. It was active in the Oklahoma fight, which led to passage of a bill that opens the way for utilities to levy new fees on rooftop solar households. In Kansas, the local AFP chapter not only lobbied for a bill to repeal the state's RPS policy, but also bankrolled television ads and set up a front group, the Kansas Senior Consumer Alliance, to cover its tracks.[33] The bill, which would harm many farmers who have installed wind turbines, passed the Kansas Senate this year. Celebrating these wins, AFP's Director of Public Affairs, Levi Russell, said, "Clearly, the state legislatures in Oklahoma and Kansas are leading the way… Lawmakers in other states would be wise to follow suit."[34] Since 2010, the Waltons have made $575,000 in grants to AFP.[35]

The Waltons have also invested $200,000 in the Franklin Center for Government and Public Integrity. Launched in 2009 with a major grant from the Koch-affiliated Donor's Trust, and staffed by former employees of the Koch Family Foundation and Americans for Prosperity, the Franklin Center has moved into the gap left by the decline of print journalism, setting up news websites and wire service in some 40 state capitals. Characterized as "highly ideological" by the Pew Research Center,[36] the organization and its local affiliates have used these "news" operations to hammer an anti-clean energy agenda. Franklin Center president Jason Stverak has described renewable power as "costly, inefficient, unreliable, and shockingly dirty."[37] The group even went so far as to push for a North Carolina law that bars state agencies from acknowledging the possibility of future sea-level rise and planning for it.[38]

Another Walton grantee, the Manhattan Institute, has focused on promoting fossil fuels and dismissing clean energy in national news media. On television programs and in the pages of large newspapers, including the *New York Times* and *Washington Post*, Manhattan Institute Senior Fellow Robert Bryce, who has questioned the validity of climate science, has called on states to repeal their RPS policies and outlined the "Five Myths About Green Energy."[39]

Supported in part by nearly half a million dollars in Walton Family Foundation grants, the Goldwater Institute for Public Policy in Arizona has filed a lawsuit seeking to overturn the state's renewable energy policy.

Other national organizations funded by the Waltons include: R Street, which recently released a study arguing that states should repeal policies that enable rooftop solar and other forms of renewable power and instead expand nuclear power; the Cato Institute, which has produced op-eds and testified in Congress against clean energy; and the Reason Foundation, which uses the pages of local newspapers to spread discredited research about the cost of renewable energy policies.[40]

Financing Groups Leading State-by-State Campaigns Against Clean Power

The Waltons have also given millions of dollars in grants over the last four years to 13 state organizations working to repeal clean energy policies. These groups are all affiliated with the State Policy Network, a confederation of state think tanks that works closely with ALEC to push its agenda. Although SPN groups do not disclose the sources for most of their funding, it appears that, like ALEC, they are largely funded by global corporations.[41]

One Walton favorite, the Goldwater Institute for Public Policy in Arizona, insists "there is no such thing as clean energy." Supported in part by nearly half a million dollars in Walton Family Foundation grants, Goldwater has filed a lawsuit, and a subsequent appeal, seeking to overturn the state's RPS policy, which mandates that utilities rely on renewable energy for some of their power and also says that a portion of this power must come from small-scale local sources, such as rooftop solar.[42] In addition to the lawsuit, Goldwater works to undermine clean energy policy by advancing the idea in the state's local media and policy circles that expanding wind and solar power generation will lead to job losses and wildly high electricity prices.[43] To back these claims, Goldwater often cites research from the Beacon Hill Institute, a close affiliate of ALEC, whose studies have been thoroughly debunked by both journalists and energy analysts.[44]

Another Walton grantee, the Georgia Public Policy Foundation, has been instrumental in keeping in place state rules that effectively prevent households from producing their own solar power. Last year, when the conservative Georgia Tea Party joined the Sierra Club in supporting a bill to lift some of these restrictions and expand opportunities to produce clean power in the state, the Georgia Public Policy Foundation teamed up with the state chapter of Americans for Prosperity to block these reforms.[45]

In California, the Pacific Research Institute, which has received $200,000 from the Walton Family Foundation and is also funded by ExxonMobil, is working to roll back the state's renewable energy policies. In a study released last year, the organization used some of the same flawed methodologies developed by Beacon Hill to claim that California's RPS policy, which calls for the state to be one-third supplied by renewable energy by 2020, is a "rate bomb" waiting to explode customers' electricity bills.[46] More recently, the Pacific Research Institute began using its media arm to campaign against the state's NEM policy, which is currently the subject of a utility-initiated regulatory review that could lead to the gutting of the policy and a sudden halt to what has been a rapid expansion of rooftop solar in the state.[47]

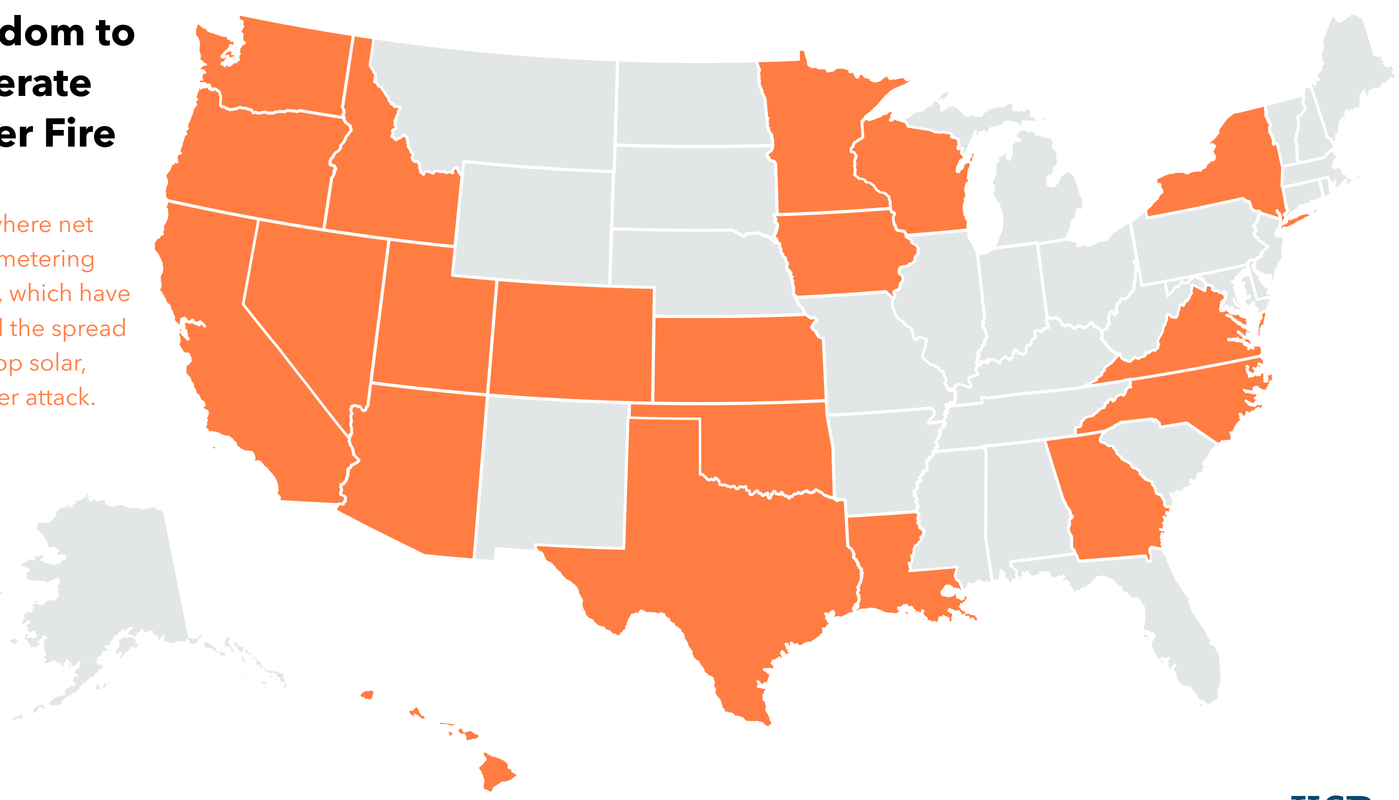
Yet another Walton grantee, the Mackinac Center in Michigan, played a key role in defeating a ballot referendum aimed at moving the state to 25 percent renewable power by 2025. Initially favored by two-thirds of the state's voters, the measure ultimately went down in a landslide. "What prompted this abrupt turn in public opinion? The most likely explanation comes down to money – and questionable claims about the ballot measure's impact," explained *Midwest Energy News*.[48] Drawing on discredited Beacon Hill research, the Mackinac Center put out a study asserting that the initiative would cost the state 10,000 jobs and send electricity rates through the roof.[49] The Mackinac Center is now campaigning against net metering.

Other Walton grantees are similarly working to block or rollback clean energy policies in Arkansas, Colorado, Florida, Illinois, Massachusetts, Missouri, Tennessee, Texas, and Wisconsin.

Meanwhile, Environmental Defense Fund, the only one of the Waltons' top environmental grantees that has a renewable energy program, has largely remained on the sidelines in these fights. Although it has expressed support for Renewable Portfolio Standards and Net Energy Metering, EDF has not waded into the fray and has had relatively little to say on the subject given the pivotal nature of these debates. John Finnigan, the organization's senior regulatory attorney for its energy program, did pen a blog post in the wake of Arizona's decision to allow the state's biggest utility to impose new fees on households with rooftop solar. In keeping with EDF's commitment not to rock the corporate boat, Finnigan declared the new fees a "win-win."[50]

Freedom to Generate Under Fire

States where net energy metering policies, which have enabled the spread of rooftop solar, are under attack.



How a Walton Company is Thwarting Rooftop Solar and Green Jobs

In June 2013, Walton-owned First Solar sent shockwaves through the solar industry when its CEO, James Hughes, published an op-ed in the *Arizona Republic* endorsing a proposal by the state's biggest utility to impose a new fee on households with rooftop solar.[51] Averaging about $50 to $100 a month, the proposed fee would be large enough to completely destroy the economics of household energy production, halting the spread of residential rooftop solar in Arizona. As the rest of the solar industry closed ranks and joined with environmental and consumer groups in opposing the plan, First Solar backed the utility, insisting that it was right to maximize its financial position. Bryan Miller, a vice president at Sunrun and president of the Alliance for Solar Choice, put First Solar's actions in perspective: "No solar company has publicly advocated against solar until First Solar."[52]

In the end, the utility won a partial victory – a monthly fee of about $5, which, although much smaller, still erodes the financial logic of rooftop solar. Residential installations have since declined by 40 percent, protecting APS, which produces most of its electricity from coal, nuclear, and gas, from competition.[53] Arizona, once a leader in solar job creation, is now one of only five states in the country where the number of solar jobs is actually declining.[54] First Solar, which does not participate in the rooftop market but builds utility-scale arrays instead, offers relatively few local jobs. Over 80 percent of its solar panel production is in Malaysia.[55] The firm seems intent on ensuring that the economic benefits of solar power remain concentrated in the hands of a few. Through its lobbying, First Solar has helped spur a World Trade Organization (WTO) proceeding that could force several U.S. states to repeal policies designed to create jobs by providing solar incentives only to projects that use panels manufactured locally.

Residential installations have since declined by 40 percent and Arizona is now one of only five states in the country where the number of solar jobs is actually declining.

It would be hard to overstate the significance of the Arizona fight – or First Solar's role in it. Sun-drenched Arizona is ground zero for rooftop solar. Utilities and fossil fuel interests hope their win there will set off a domino effect in other states. Next on their target list are two other top solar states: California and Nevada. Utility-initiated regulatory reviews are now underway that could substantially weaken these states' robust NEM policies and force new fees on households with rooftop solar.[56] First Solar, as we'll see, is now intervening in a fight over rooftop fees in Nevada and closely following an emerging regulatory debate over rooftop solar in California.

The Waltons' Solar Company

Fifteen years ago, John Walton, Rob Walton's younger brother, became an early investor in First Solar, putting over $150 million into the company via his venture capital firm, True North Partners. After his death, the remaining three Walton siblings chose to maintain the family's ownership stake. With about 30 percent of shares, the Walton family is by far the largest stockholder in First Solar. The family is identified as "the Significant Stockholder" in First Solar's annual reports, which caution other investors that "the Significant Stockholder has substantial influence over all matters requiring stockholder approval."[57]

In addition to their ownership stake, the Waltons are also closely connected to First Solar's leadership. Michael Ahearn, who co-founded True North Partners with John Walton, served two stints as First Solar's CEO and is currently the chair of the company's board. Rick Chapman, a long-time Walton family advisor and the Chief Financial Officer of Walton Enterprises, which manages the family's finances including their Walmart holdings, joined the First Solar board in 2012. The company's leadership team also includes veterans of the fossil fuel industry. First Solar's Executive Vice President and General Council, Paul Kaleta, previously held the same post at Koch Industries.

First Solar, which is headquartered in Tempe, Arizona, subscribes to what could be characterized as a Walmart-style approach to energy: centralized ownership and management of power generation, production jobs that are outsourced overseas, and minimal say or benefit for local communities. First Solar does not participate in the residential rooftop market, but instead builds solar arrays to supply power to utilities. With a market capitalization of $7 billion, First Solar is the world's largest contractor in the utility-scale solar industry.[58]

Because First Solar does not participate in the rooftop market, but instead builds solar arrays for utilities, the company's interests are closely aligned with those of utilities and even fossil fuel companies. Its latest annual report cites rooftop solar as a threat.

Because of this business model, First Solar's interests are closely aligned with those of utilities and even fossil fuel companies. While weakening NEM policies and imposing fees on households with rooftop solar would slow the overall growth of solar energy, doing so would ensure that what expansion does occur would be concentrated in the utility-scale segment of the market. In the absence of NEM policies, First Solar would no longer have to compete with households that generate renewable energy. In its most recent annual report, First Solar cites rooftop solar as a competitive threat. "We face numerous difficulties in executing our Long Term Strategic Plan," the report states, "including the following… difficulty in competing against competitors who may gain in profitability and financial strength over time by successfully participating in the global rooftop PV solar market."[59] Pushing an anti-rooftop agenda is also a great way to curry favor with utilities, First Solar's primary customers.

To be clear, utility-scale solar as a replacement for fossil fuels has significant environmental benefits. But its growth should not come at the expense of expanding decentralized renewable energy. If First Solar has its way, the potential benefits to the U.S. economy of a transition to renewable power will be largely eliminated. Not only will households be prevented from owning a share of the generating capacity, but most solar jobs will disappear. More than half of the 143,000 jobs in the solar industry, including two-thirds of the new jobs created in the last year, are in rooftop installations, not in solar manufacturing or operating utility solar arrays.[60] Installers earn an average of about $24 an hour, according to the Solar Foundation.[61] "What's great about the rooftop solar business as opposed to utility-scale is that, because they have to get on your roof, these are jobs that will not get outsourced," explained Will Craven, a SolarCity spokesperson, in an interview with *Tucson Weekly*.[62]

First Solar Sides with Utilities and Fossil Fuel Interests in Arizona

Last year, Arizona Public Service (APS), the largest electric utility in Arizona, petitioned the state's utility regulator, the Arizona Corporation Commission (ACC), to make a radical change in the state's net metering policy. The popular policy has propelled the growth of rooftop solar from roughly 1,000 households five years ago to about 30,000 today.[63] The economic benefits of this fast-growing sector are significant: rooftop solar cuts the average household's power bill by about two-thirds, or $120 a month, and, as of 2012, the solar industry had created almost 10,000 new jobs in the state, with about 40 percent of them in rooftop installation.[64]

Although rooftop solar currently accounts for only a tiny fraction of APS's 1 million customers, its rapid growth is a threat to the utility's future profits. APS derives more than one-third of its electricity from coal and most of the rest from nuclear and gas.[65] Each household that decides to produce its own power lessens demand for APS's fossil fuel energy. According to Lyndon Rive, CEO of SolarCity, "If you look at the rate of adoption of customers, over next 20 years, that would roughly equal $2 billion in lost profits [for APS]."[66]

Although rooftop solar currently accounts for only a tiny fraction of Arizona households, its rapid growth is a threat to the utility's future profits. Each household that decides to produce its own power lessens demand for APS's fossil fuel energy.

To avert this loss of profits, APS petitioned state regulators to undermine Arizona's net energy metering policy. The company urged the ACC to do one of two things: either allow APS to impose a fee of about $50 to $100 per month on households with rooftop solar, or authorize the utility to buy the power these homes generate at 4 cents per kilowatt-hour and sell it back to them at 12 cents per kilowatt-hour.[67] Either way, the average rooftop solar household would see their $120 a month savings cut to about $50 a month – not enough to cover the cost of installing solar panels. What APS proposed, in short, was that the ACC deal a deathblow to rooftop solar.

The brazenness of this proposal is perhaps best understood in light of the fact that APS is a leading member of ALEC's Energy, Environment, and Agriculture Task Force and a key player within the utility trade group, the Edison Electric Institute. If the industry could challenge rooftop solar in its sunny stronghold of Arizona, then it could do so anywhere. And the state's regulatory context appeared ripe for a win: Four of the five members of the ACC are also members of ALEC.

To make its case, APS insisted that Arizona's NEM policy was forcing it to pay solar households more for their electricity than it was worth, pushing up rates for non-solar households. APS made this claim despite the fact that its own 2009 study found that rooftop solar was a net financial benefit to the utility, saving APS more in averted costs than it was paying households for their power.[68] Shortly before APS petitioned regulators to change the NEM policy, it released an "updated" version of the 2009 study which valued rooftop solar at just 3.6 cents per kilowatt-hour, about one-quarter of what the earlier study had found.[69] APS's new analysis has been widely criticized for flaws in its methodology and for being out-of-step with much of the research in the field.[70] "There are three or four dominant approaches for valuing solar, but they all seem to be coalescing around the same general conclusion," explained Karl Rabago, a former Texas Public Utility Commissioner and executive director of the Pace Energy and Climate Center at Pace Law School. "Pretty much everybody agrees now. When you account for all the value this stuff brings, it's worth more than the cost."[71]

Still, APS pressed its case. In a bid to sway the public, APS secretly paid two nonprofit groups – 60 Plus and Prosper – to campaign for its proposal. The groups, which have a grassroots feel, but in fact are part of the Koch brothers' political action network, ran ads claiming that Arizona consumers were subsidizing the solar ambitions of California billionaires. The ads asserted that solar-producing households were costing other ratepayers as much as $1,000 a year and even evoked the specter of President Obama.[72] APS initially denied that it had anything to do with these groups, but later confessed to the *Arizona Republic* that its parent corporation, Pinnacle West, had funneled money to both organizations via Sean Noble, a Koch operative whose Arizona nonprofit was recently fined a record-breaking sum for violating election laws in California.[73] Pinnacle West ultimately admitted spending a total of $9 million to push its plan to gut net metering, include $3.7 million on publicity and advertising.[74]

First Solar stepped into this debate at a critical moment for APS. As environmentalists, consumer groups, and solar industry employees rallied to defend the state's NEM policy and expose the dark underside of the utility's campaign, APS became increasingly concerned that it was developing an anti-solar public image. It began running television ads and issuing media statements touting its support for solar power. Shortly thereafter, James Hughes, First Solar's CEO, published his op-ed in the *Arizona Republic*. Hughes, a former Enron executive, argued that APS "was a solar pioneer long before it was fashionable." He endorsed the utility's contention that solar households were receiving "a very substantial 'cross-subsidy' funded by all other utility customers who must pay proportionately more in rates." Ignoring the significant job and economic benefits the state derives from rooftop solar, as well as rooftop solar's role in accelerating Arizona's transition to renewable power, Hughes argued that utility-scale solar would be more cost-effective. In other words, Hughes used his solar credentials to assert that being anti-rooftop solar was actually a pro-solar position. A few weeks later, First Solar filed official comments with the ACC in support of gutting the state's net metering policy.

First Solar stepped into this debate at a critical moment for the utility. First Solar backed APS's dubious claim that rooftop solar households were getting a "cross-subsidy" from other customers and used its solar credentials to insist that the utility was pro-solar, despite its campaign to block the spread of rooftop solar.

Last November, with hundreds of rooftop solar supporters gathered outside, the ACC held its final hearing on APS's proposal. The commission ultimately decided to allow APS to impose a fee on households with rooftop solar, but a much smaller one of about $5 per month. At first, it might seem like APS lost, but in fact the new fee has accomplished, in part, what the utility and its allies at First Solar wanted: residential solar installations have dropped off considerably and solar industry jobs are disappearing.[75] APS apparently sees the new fee merely as a first salvo; the utility is now pushing a bill that would levy a property tax on rooftop solar systems.

Next Up: Going After Rooftop Solar Policies in Nevada and California

After helping to knock rooftop solar on its heels in Arizona, First Solar has been involved in two other states where utilities are trying to stop the spread of household solar: California and Nevada. These two states, plus Arizona and Colorado, comprise the only four states in the country that energy analysts have said have the potential to derive 30 percent or more of their electricity from rooftop solar.[76] As such, these states constitute the leading threats to utility profits and to the centralized system of energy production they and their suppliers, including both First Solar and fossil fuel producers, favor.

After helping to knock rooftop solar on its heels in Arizona, First Solar has been involved in two other states where utilities are trying to stop the spread of household solar: California and Nevada.

In Nevada, First Solar has been a party to a Public Utilities Commission (PUC) proceeding that could result in significant changes to the state's net metering policy. The state's largest utility, NV Energy, wants the PUC to allow it to levy fees on residential consumers and create a new, and potentially more expensive, rate class for rooftop solar households.[77] As part of its review, the PUC announced that it would commission a study to quantify the costs and benefits of rooftop solar to the utility and the state as a whole. In comments filed with the PUC and testimony at a hearing, First Solar insisted that the commission should structure the study to discount the value of rooftop solar relative to utility-scale solar and show that rooftop solar is too expensive.[78] When the study was released ten months later, however, it concluded that the benefits of rooftop solar more than outweigh what the utility is required to pay for this power.[79]

First Solar is also engaged in a more serious fight in California, where more than 190,000 households and businesses have installed rooftop solar.[80] Two years ago, utilities began campaigning to undermine support for the state's NEM policy.[81] A bill passed last year requires the California Public Utilities Commission (CPUC) to overhaul the state's electricity rate structure and NEM policy. Some of the proposed changes, including new fees, could slow or block the spread of rooftop solar. First Solar is following the proceeding and is registered as an interested party on CPUC "service list." So far, there has been no opportunity for comment, but we might assume that First Solar will advance much the same position as it has in Arizona and Nevada.

Should First Solar and its utility and fossil fuel allies succeed, the implications for the spread of rooftop solar, both in California and nationally, could be severe. Utilities would "dearly like to strangle rooftop solar," said retiring CPUC member Mark Ferron in January.[82] "How the net metering program is restructured will have a significant effect on the long-run viability of residential solar in California," noted the international law firm Chadbourne & Parke in a recent advisory to its clients.[83] Edward Fenster, chairman of Sunrun, told the *New York Times* that the fight in California is a "watershed moment" for the whole country's solar future. If utilities succeed here, he says, "in two years we'll be fighting 41 of these battles [in 41 states]."[84]

Sabotaging Green Job Growth

One particularly troubling consequence of the Waltons' attack on rooftop solar is the loss of job opportunities, particularly rooftop installation jobs, which pay $24 an hour on average, more than twice what the typical Walmart sales associate earns. As it turns out, that's not the only way the Waltons are undercutting good jobs in this sector. First Solar is also lobbying federal officials to ensure that solar panel manufacturers — no matter how much financial support they receive from the public — are free to locate their factories elsewhere.

Between 2009 and 2013, First Solar spent almost $3 million on federal lobbying.[85] Much of its lobbying has focused on urging the U.S. Trade Representative to challenge, via the World Trade Organization (WTO), "domestic content" laws enacted in India and elsewhere. These laws require that a portion of the solar panels used in solar projects that receive public incentives be manufactured within the country. The idea behind these laws is to ensure that public support for expanding solar translates into public benefits in the form of new jobs.

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Earlier this year, the U.S. Trade Representative granted First Solar's wish when it filed a formal complaint against India's domestic content requirement with the WTO. A WTO panel will now decide whether to strike down the law, which requires that half of the 750 megawatts of new solar power the Indian government has committed to financing be set aside for projects using domestic solar panels.[86] The law means that First Solar, which has dominated a key segment of India's utility-scale solar market, but has no factories in the country, is eligible to bid on only half of the new capacity to be installed under the government program.[87]

First Solar's actions now threaten to unravel similar laws in several U.S. states. India has responded to the U.S. complaint by raising questions about domestic content policies in Connecticut, Delaware, Massachusetts, and Minnesota. All four policies have the same goal: to create good jobs while spurring renewable energy. Minnesota's Solar Rewards Program, for example, provides a rebate to households and businesses that install solar systems manufactured in the state.[88]

In a letter to the U.S. Trade Representative, more than a dozen environmental groups, including 350.org, Greenpeace, and Sierra Club, urged the U.S. to drop its complaint and argued that eliminating the job benefits of solar incentives would reduce support for renewable power and slow its growth. "We believe this misguided claim could delay growth of the solar market in India and harm the future of solar deployment at a time when growth of renewable energy has never been more critical," the groups wrote. "We urge the United States to not bring forward this case, and to agree to a solution that allows India to support and build its domestic solar industry, just as we must do at home."[89]

While First Solar is intent on denying special incentives for solar companies that create local jobs, it has no problem taking government handouts on its own behalf, despite providing relatively few economic benefits in exchange. Indeed, public help has been integral to the company's bottom line. First Solar has received over $3 billion in loan guarantees from the U.S. government, including significant backing from the Export-Import Bank and, most recently, a $290 million federal loan to finance a project in Chile.[90] In-kind support has come from the National Renewable Energy Laboratory, which helped the company develop technology, as well as the Bureau of Land Management: First Solar's U.S. projects currently occupy over 9,000 acres of publicly owned federal lands.[91] The company has also received over $16 million in tax credits to finance its only domestic factory, in Perrysburg, Ohio.[92]

Earlier this year, the U.S. Trade Representative granted First Solar's wish when it filed a formal complaint with the WTO. First Solar's actions now threaten to unravel laws in several U.S. states that tie solar incentives to local job creation.

Last year, even as the company and its significant shareholder, the Waltons, grew fat on public support, First Solar laid off 150 people at its Perrysburg plant.[93] Meanwhile, in Malaysia, where its main factory is, the minimum wage is set at just under $300 a month.[94]

Conclusion

The Waltons began presenting themselves as environmentalists almost a decade ago. But the family's environmentalism is best understood not as an effort to transform the economy to operate within ecological bounds, but rather as a potent strategy for fortifying the status quo. For the Waltons, environmentalism is a tool for furthering Walmart's growth and dominance and ensuring that a small number of corporations and investors continue to hold most of the power and wealth. This preeminent agenda is evident in the family's support for anti-environmental politicians and political groups working to impede renewable energy. But it is perhaps most vividly illustrated by the family's solar company, First Solar, which provides a remarkable case study of the nuances and complexities of the Waltons' brand of greenwashing. While there's room for solar in the Waltons' desired future, it exists only to the extent that it remains centrally owned and controlled, and only to the degree that it generates income for a small circle of wealthy investors and little opportunity for the rest of us. Residential rooftop solar has enormous potential to both deliver environmental benefits and lift the economic fortunes of ordinary Americans. We should not let the Waltons and other powerful interests snatch that future from us.

Appendix

Walton Family Foundation Grants to Groups Fighting Clean Energy, 2010–2013*

American Enterprise Institute	National	$799,538
Americans for Prosperity	National	$575,000
Pioneer Institute, Inc.	Massachusetts	$493,950
Goldwater Institute for Public Policy	Arizona	$450,000
R Street Institute	National	$334,915
Georgia Public Policy Foundation	Georgia	$255,000
Franklin Center for Government and Public Integrity	National	$200,000
Pacific Research Institute for Public Policy	California	$200,000
Reason Foundation	National	$190,000
John K. Maclver Institute for Public Policy, Inc.	Wisconsin	$176,800
Institute for Humane Studies	National	$160,000
Heritage Foundation	National	$150,000
Beacon Center of Tennessee	Tennessee	$125,000
Cato Institute	National	$75,000
Show-Me Institute	Missouri	$65,000
Illinois Policy Institute	Illinois	$50,000
Mackinac Center	Michigan	$50,000
Arkansas Policy Foundation	Arkansas	$40,000
Independence Institute	Colorado	$40,000
James Madison Institute for Public Policy Studies, Inc.	Florida	$40,000
Texas Public Policy Foundation	Texas	$25,000
		$4,495,203

*This list includes only grants that the Walton Family Foundation discloses publicly. The foundation appears to have made at least one undisclosed donation to the American Legislative Exchange Council (ALEC). Donations by individual family members are also not included.

Notes

1. GTM Research and Solar Energy Industries Association, *Solar Market Insight Report 2013 Year in Review*, Mar. 4, 2014; GTM Research and Solar Energy Industries Association, *Solar Market Insight Report: Q2 2014*, Sep. 5, 2014; Mark Chediak, Christopher Martin, and Ken Wells, "Utilities Feeling Rooftop Solar Heat Start Fighting Back," Bloomberg, Dec 26. 2013; Silvio Marcacci, "US Solar Energy Capacity Grew An Astounding 418% From 2010-2014," *Clean Technica*, Apr. 24, 2014.

2. GTM Research and Solar Energy Industry Association, *Solar Market Insight Report: 2014 Q1*; In a growing number of states, rooftop solar is cheaper than buying electricity from the grid. See the Institute for Local Self-Reliance's Solar Parity Map at http://www.ilsr.org/projects/solarparitymap/.

3. John Farrell, "Solar Costs and Grid Prices On a Collision Course," Institute for Local Self-Reliance, Apr. 4, 2013.

4. *National Solar Jobs Census 2013*, The Solar Foundation, Feb. 2014; "There are Already More American Jobs in the Solar Industry than in Coal Mining," PolitiFact Rhode Island, May 27, 2014.

5. *National Solar Jobs Census 2013*, The Solar Foundation, Feb. 2014; Walmart wage data reported by the market research firm IBIS World.

6. "How to Lose Half a Trillion Euros," *The Economist*, Oct. 12, 2013; Guy Turner, *Global Renewable Energy Market Outlook 2013*, Bloomberg New Energy Finance, Apr. 22, 2013.

7. *Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business*, Edison Electric Institute, Jan. 2013.

8. John Farrell, "Distributed Renewable Energy Under Fire," Institute for Local Self-Reliance, Mar. 19, 2014; Edward Humes, "Throwing Shade," *Sierra Magazine*, May/June 2014; Steven Mufson and Tom Hamburger, "A Battle is Looming over Renewable Energy, and Fossil Fuel Interests are Losing," *Washington Post*, Apr. 25, 2014; *Attacks on Renewable Energy Standards and Net Metering Policies By Fossil Fuel Interests & Front Groups 2013-2014*, Energy & Policy Institute, May 2014; Suzanne Goldberg, "Secret Funding Helped Build Vast Network of Climate Denial Think-tanks," *The Guardian*, Feb. 14, 2013.

9. "Solar Installations Drop After APS Assesses Charge to Solar Customers," Sierra Club press release (citing data published by the utility), Apr. 14, 2014.

10. Ryan Randazzo, "APS Expects Fee on New Solar Users to Hold Steady," *Arizona Republic,* May 2, 2014; Ryan Randazzo, "As Arizona Wrestles With Solar's Costs, Industry Slows," *Arizona Republic*, Jul. 13, 2014.

11. Editorial Board, "The Koch Attack on Solar Energy," *New York Times*, Apr. 26, 2014; David Biello, "Fight over Rooftop Solar Forecasts a Bright Future for Cleaner Energy," *Scientific American*, Mar. 25, 2014.

12. Michael Copley, "In Solar/Utility Fight, Some Question 'Us vs. Them' Framing," *SNL Power Daily with Market Report*, Oct. 29, 2013.

13. First Solar, Form 10-K, Annual Report for the year ended Dec. 31, 2013.

14. "Twenty First Century Leadership," speech presented by Lee Scott, Oct. 24, 2005.

15. CDP 2013 Information Request: Wal-Mart Stores, Inc.

16. EPA's Green Power Partnership, Top Partner Rankings, 2014.

17. Stacy Mitchell, *Walmart's Assault on the Climate*, Institute for Local Self-Reliance, November 2013; Stacy Mitchell, *Walmart's Greenwash*, Institute for Local Self-Reliance, March 2012.

18. Author's analysis, based on voting records data from the League of Conservation Voters and campaign donation data from the Center for Responsive Politics.

19. Donation data is from the Center for Responsive Politics; Womack's signed No Climate Tax pledge form is available online via americansforprosperity.org, viewed Sept. 28, 2014; "Rep. Steve Womack: Keystone XL would Spur 'Energy Renaissance,' CBS News, July 4, 2014; Oil Change International, Dirty Energy Money Database, accessed Sept. 28, 2014.

20. Author's analysis of the Walton Family Foundation's annual reports.

21. Diane Cardwell, "In U.S. States, a Pushback on Green Power," *New York Times*, May 29, 2014.

22. Andy Marso, "Wind War's Total: Nearly Half-Million in Lobbying Dollars," *Topeka Capital-Journal*, May 25, 2014.

23. ALEC does not publicly reveal who serves on its task forces. Citing Common Cause, Matt Kasper reports that members of ALEC's Energy, Environment, and Agriculture Task Force include American Electric Power, BP, Chevron, Cloud Peak Energy, Continental Resources, Dominion Resources Services, ExxonMobil, Koch Companies Public Sector, Peabody Energy, PacifiCorp, and Shell. See Matt Kasper, "How A Powerful Group of Corporations Quietly Tried to Roll Back Clean Energy Standards," *Climate Progress*, Aug. 8, 2013. Documents obtained by Greenpeace and the Center for Media and Democracy show that one-third of the official sponsors of ALEC's national conference in May were dirty energy companies, their trade associations, and front groups. See Nick Surgey, "Coal and Oil Polluters Dominate ALEC Conference," Center for Media and Democracy, Jul. 31, 2014.

24. Steven Mufson and Tom Hamburger, "A Battle is Looming over Renewable Energy, and Fossil Fuel Interests are Losing," *Washington Post*, Apr 25, 2014; Evan Halper, "Koch Brothers, Big Utilities Attack Solar, Green Energy Policies," *Los Angeles Times*, Apr. 19, 2014; American Legislative Exchange Council, "2013 Annual Meeting: Policy Report," Dec. 2013; American Legislative Exchange Council's Energy, Environment and Agriculture Task Force, "Updating Net Metering Policies Resolution," Dec. 2013.

25. Suzanne Goldenberg, "ALEC Calls for Penalties on 'Freerider' Homeowners in Assault on Clean Energy," *The Guardian*, Dec. 4, 2013.

26. 41st Annual Meeting Agenda, ALEC website, accessed Aug. 14, 2014; Rep. Chris Taylor, "ALEC Otherworld," *The Progressive*, May 13, 2014

27. Zaid Jilani, "Exposed: The Corporations Funding the Annual Meeting of the Powerful Right-Wing Front Group ALEC," *Think Progress*, Aug. 5, 2011.

28. Lisa Graves, "Taxpayer-Enriched Companies Back Jeb Bush's Foundation for Excellence in Education, its Buddy ALEC, and Their 'Reforms,'" PR Watch, Nov. 28, 2012; Walton Family Foundation, "Full Staff Listing," organization website, accessed Aug. 12, 2014.

29. Jessica Wohl, "Wal-Mart Ending Membership in Conservative Group," Reuters, May 31, 2012.

30. See, for example, "How Renewable Electricity Standards Deliver Economic Benefits," Union of Concerned Scientists, May 2013.

31. Benjamin Zycher, "Wind and Solar Power, Part I: Uncooperative Reality," American Enterprise Institute, Jan 2012; Timothy Considine and Edward Manderson, *Balancing Fiscal, Energy and Environmental Concerns: Policy Options for California's Energy and Economic Future*, American Enterprise Institute, June 20, 2012; Kenneth P. Green, "Not Free to Choose: The Reality behind Clean Energy Standards," *The American*, Aug. 23, 2011; Benjamin Zycher, "The Folly of Renewable Electricity," *Daily Caller*, April 20, 2011.

32. Diane Cardwell, "In U.S. States, a Pushback on Green Power," *New York Times*, May 29, 2014

33. Andy Marso, "FP State Leader Admits Link to Group Opposing Renewable Energy Law," *Topeka Capital-Journal*, May 9, 2014; Andy Marso, "Wind War's Total: Nearly Half-Million in Lobbying Dollars," *Topeka Capital-Journal*, May 25, 2014; Andy Marso, "Legislative Battle over Renewable Energy Continues," *Topeka Capital-Journal*, Feb. 17, 2014.

34. "Statement from Americans for Prosperity," posted on the MSNBC web site, Apr. 21, 2014.

35. The Walton Family Foundation's donations go to the Americans for Prosperity Foundation, which, as a 501(c)3 tax-exempt organization, is eligible to accept charitable donations for its public education activities. The Foundation works closely with its sister organization, Americans for Prosperity, which is a political action group.

36. Pew Research Center's Journalism Project, *Examining The Changing News Landscape*, Jul. 18, 2011; statement on the Franklin Center web site, accessed on Jul. 5, 2014.

37. Jason Stverak, "The Dirty Little Secret about 'Clean' Energy," Franklin Center for Government & Public Integrity, Apr. 22, 2013.

38. Suzanne Goldenberg, "Media Campaign against Windfarms Funded by Anonymous Conservatives: Secretive Funding Network Channelled Millions to Stop State Governments Moving Towards Renewable Energy," *Guardian*, Feb. 15, 2013.

39. Robert Bryce, "Five Myths about Green Energy," *Washington Post*, Apr. 25, 2010; Robert Bryce, "The Gas is Greener," *The New York Times*, Jun. 7, 2011; Robert Bryce, *Maintaining the Advantage: Why the U.S. Should Not Follow the EU's Energy Policies*, Manhattan Institute, February 2014; Media Matters, "Who Is Robert Bryce?," Oct. 7, 2011.

40. George David Banks, *A Rational Approach to U.S. Civil Nuclear Power,* R Street Policy Study No. 23, May 2014; Robert J. Michaels, Panel Testimony on H.R. 1719 and H.R. 2915, Sept. 22, 2011; Patrick J. Michaels, "The Great Renewable Energy Scam," *Forbes*, Jan. 19, 2012; see, for example, Julian Morris, "Tortoises and BrightSource Are Costing Taxpayers Dearly," *Victorville (California) Daily Press*, Sept. 10, 2012.

41. Center for Media and Democracy, *Exposed*: *The State Policy Network*, Nov. 2013

42. Ryan Randazzo, "Goldwater Institute Fights Renewable-Energy Rules in Arizona Court," *The Arizona Republic*, Nov. 17, 2010.

43. See, for example: Byron Schlomach, "Time to End the Costly Renewable Energy Mandate," Goldwater Institute website, May 07, 2013.

44. "Our View: Industry-Funded Study Bad Basis for Energy Policy," *Portland Press Herald Editorial*, Nov. 28, 2012; Juliet Elpern, "Climate Skeptic Group Works to Reverse Renewable Energy Mandates," *Washington Post*, Nov. 24, 2012; Elliott Negin, "Koch Brothers Fund Bogus Studies to Kill Renewable Energy," Union Of Concerned Scientists, Dec. 7, 2012; Frank Ackerman (Senior Economist At Synapse Energy Economics), "Not-So-Smart ALEC: How the Lobbying Group Uses Bad Data to Fight Clean Energy," *Grist*, Feb. 23, 2013.

45. Benita Dodd, "Imposing Renewable Energy Won't Work," *Atlanta Journal Constitution*, Mar. 7, 2013; Clair Thompson, "Tea Partiers Fight over Solar Power in Georgia," *Grist*, Jul. 12, 2013; George Chidi, "Why is a 'Free-Market' Think Tank Defending a Government-Regulated Monopoly?" Peachtree Pundit, Sept. 19, 2013.

46. Benjamin Zycher, *CA's 33% Renewable Portfolio Standard Will Raise Power Rates by 13 Percent*, Pacific Research Institute, January 2013.

47. Wayne Lusvardi, "CA Rooftop Solar will Cost Other Customers $1 Billion per Year," Calwatchdog.org, Oct. 21, 2013.

48. Dan Ferber, "Analysis: Why Michigan's Renewable Energy Amendment Failed," *Midwest Energy News*, Nov 13, 2012.

49. David G. Tuerck, Ph.D., Paul Bachman, and Michael Head, *The Projected Economic Impact of Proposal 3 and Michigan's Renewable Energy Standard*, Mackinac Center, Sept. 24, 2012.

50. John Finnigan, "The Arizona Public Service Ruling on Solar: Here's Why it's Win-Win," EDF Voices blog, Nov. 25, 2013.

51. James Hughes, "Utilities Right to Seek Most Bang for Their Solar Buck," *Arizona Republic*, Jun. 3, 2013.

52. Michael Copley, "In Solar/Utility Fight, Some Question 'Us vs. Them' Framing," *SNL Power Daily with Market Report*, Oct. 29, 2013.

53. "Solar Installations Drop After APS Assesses Charge to Solar Customers," Sierra Club press release (citing utility data), Apr. 14, 2014.

54. Ryan Randazzo, "As Arizona Wrestles with Solar's Costs, Industry Slows," *Arizona Republic*, Jul. 13, 2014.

55. First Solar, Form 10-K, Annual Report for the year ended Dec. 31, 2013.

56. James Montgomery, "Rank 'Em: The Most Solar-Friendly States in the US," *Renewable Energy World*, Jul. 30, 2013. Also see *Freeing the Grid 2014: Best Practices in State Net Metering Policies and Interconnection Procedures*, which gives Arizona, California, and Nevada "A" grades for their net metering policies.

57. First Solar, Form 10-K, Annual Report for the year ended Dec. 31, 2013.

58. GTM Research and Solar Energy Industry Association, *Solar Market Insight Report: Year in Review 2012*.

59. First Solar, Form 10-K, Annual Report for the year ended Dec. 31, 2013.

60. *National Solar Jobs Census 2013*, The Solar Foundation, Feb. 2014.

61. *National Solar Jobs Census 2013*, The Solar Foundation, Feb. 2014.

62. D.A. Barber, "The Battle for a Solar Arizona," *Tucson Weekly*, Sep. 26, 2013.

63. Rosalind Jackson, "Shady Math Puts Rooftop Solar at Risk in Arizona," Vote Solar, Apr. 30, 2013.

64. Editorial Board, "Arizona's Solar Flare-Up," *Wall Street Journal*, Nov. 19, 2013; The Solar Foundation, *Arizona Solar Jobs Census 2013*, February 2014.

65. Arizona Public Service, 2012 *Integrated Resource Plan*.

66. Ryan Randazzo, "Will Arizona's Solar Showdown Set Precedent for the Nation?" *Arizona Republic,* Oct. 29, 2013.

67. ASU Energy Policy Innovation Council, *APS's Proposal to Change Net-Metering*, October 2013.

68. "Distributed Renewable Energy Operating Impacts and Valuation Study," produced by R.W. Beck for Arizona Public Service, January 2009.

69. "2013 Updated Solar PV Value Report," produced by SAIC for Arizona Public Service, May 2013.

70. For a detailed look at the value of rooftop solar in Arizona and a critique of the assumptions and methods used in the 2013 APS study, see Crossborder Energy's study, *The Benefits and Costs of Solar Distributed Generation for Arizona Public Service*, May 8, 2013. Ryan Randazzo, "APS, Solar Industry at Odds on Value of Power from Rooftop Units," *Arizona Republic*, May 15, 2013; Rosalind Jackson, "Shady Math Puts Rooftop Solar at Risk in Arizona," Vote Solar, Apr. 30, 2013; Herman K. Trabish, "The True Value of Arizona Solar, By the Numbers," *Green Tech Media*, May 14, 2013.

71. Quoted in Herman K. Trabish, "The True Value of Arizona Solar, By the Numbers," *Green Tech Media*, May 14, 2013.

72. 60 Plus Association, "Corporate Welfare," YouTube, Jul. 2, 2013; Prosper, "Fair," YouTube, Jul. 12, 2013.

73. Ryan Randazzo and Robert Anglen, "APS, Solar Companies Clash over Credits to Customers," *Arizona Republic*, Oct. 21, 2013; Matea Gold and Tom Hamburger, "California Donor Disclosure Case Exposes How Nonprofit Groups Can Play in Politics," *Washington Post*, Nov. 4, 2013; Kim Barker and Theodoric Meyer, "The Dark Money Man: How Sean Noble Moved the Kochs' Cash Into Politics and Made Millions," Propublica, Feb. 14, 2014.

74. APS letter in response to a request by ACC Commissioner Robert Burns, dated Nov. 6, 2013.

75. "Solar Installations Drop after APS Assesses Charge to Solar Customers," Sierra Club press release (citing utility data), Apr. 14, 2014.; Ryan Randazzo, "APS Expects Fee on New Solar Users to Hold Steady," *Arizona Republic*, May 2, 2014; Ryan Randazzo, "As Arizona Wrestles with Solar's Costs, Industry Slows," *Arizona Republic*, Jul. 13, 2014.

76. Vince Font, "Countdown: What Are the Top 10 Solar States in the US?" *Renewable Energy World*, Aug. 22, 2014.

77. Susannah Churchill, "Nevada Solar Net Metering Will Save the Grid $36 Million, Says State Report," *Renewable Energy World*, Jul. 8, 2014.

78. Comment of First Solar, Docket No. 13-07010, submitted to the Public Utilities Commission of Nevada, Aug. 23, 2013; Transcript of proceedings, Docket No. 13-07010, Public Utilities Commission of Nevada Workshop, Sep. 12, 2013.

79. Energy + Environmental Economics, *Nevada Net Energy Metering Impacts Evaluation*, produced for the Nevada Public Utilities Commission, July 2014.

80. "California," Vote Solar website, accessed Jun. 14, 2013.

81. Anne C. Mulkern, "Utilities Challenge Net Metering as Solar Power Expands in Calif.," ClimateWire, April 2, 2013; Anne C. Mulkern, "Middle Class Homeowners Flock to Rooftop Solar," ClimateWire, Oct 22, 2013; Christopher Martin and Mark Chediak, "California Utilities Say Solar Raises Costs for Non-Users," Bloomberg, Dec. 17, 2012.

82. David R. Baker, "California Official: Utilities Would Like to 'Strangle' Solar," *San Francisco Chronicle*, Jan. 21, 2014.

83. Chadbourne & Parke LLP, "Changes Ahead for California Residential Solar — Net Metering, Retail Rate Structure, Rooftop Solar, AB 327," *Project Finance Newswire*, February 2014.

84. Diane Cardwell, "On Rooftops, a Rival for Utilities," *The New York Times*, Jul. 26, 2013.

85. Author's analysis of data published by the Center for Responsive Politics.

86. Brian Wingfield, "U.S. Presses Trade Action Against India on Solar Energy," Bloomberg, Feb 10, 2014; "WTO Sets Up Dispute Panel to Examine India-US Solar Spat," *The Indian Express*, Jul. 19, 2014.

87. Lucy Woods, "India Rejects US Request for WTO Panel to Settle Trade Dispute," *PV Tech*, May 1, 2014.

88. Ben Lilliston, "What Goes Around Comes Around: U.S. Trade Agenda vs. Climate and Green Jobs," Institute for Agriculture and Trade Policy, May 13, 2014.

89. Letter to Ambassador Michael Froman from 13 environmental organizations, dated Apr. 23, 2014.

90. Christopher Martin, "First Solar ex-CEO Rob Gillette's Big Severance," Bloomberg News, October 28, 2011; Patrick O'Grady, "First Solar to Benefit from $57.3M Export-Import Bank Loan," *Phoenix Business Journal*, Jul 21, 2012; "First Solar Set to Build Largest PV Solar Power Plant in Latin America," Business Wire, Jun. 26, 2014.

91. U.S. Department of the Interior, Bureau of Land Management website, "Renewable Energy Projects Approved Since the Beginning of Calendar Year 2009," viewed June 26, 2014; National Renewable Energy Laboratory, "Rapid Deposition Technology Holds the Key for World's Largest Solar Manufacturer," October 2010.

92. Tom Cheyney, "Production Stimulant: Of $2.3B in New U.S. Manufacturing Tax Credits, Solar Firms Score Cool Billion," *PV Tech*, Jan 9, 2010.

93. "First Solar Inc. Announces Layoffs for 150 People in its North American Plants," *Toledo Blade*, May 8, 2013.

94. Liz Gooch, "Malaysia Enacts Minimum Wage," *New York Times*, May 1, 2012.