

# THE SUN SHOULD SET ON SOLAR SOCIALISM



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# Solar Report

## Introduction

To the extent that taxpayers pay attention to renewable energy policy, they are likely to be most familiar with the infamous solar panel manufacturer Solyndra, which received \$535 million from the Department of Energy's Loan Guarantee Program (LGP) before the company went bankrupt in 2011. This well-publicized boondoggle opened the door for greater scrutiny of all renewable energy programs and subsidies, which include loan guarantees, grants, tax incentives, and tax credits. Although various parts of these programs are available for biofuels, fuel cells, geothermal, hydrogen, hydropower, solar, and wind, solar is now drawing the most scrutiny because of the amount of federal and state government support it needs to maintain viability.

Energy subsidies have been around since the 1970s, but really took off after Congress passed the Energy Policy Act of 2005.<sup>1</sup> The legislation dramatically changed U.S. energy policy by creating commercial and residential tax incentives and loan guarantees for energy production of several types. The Act implemented or extended tax reductions for various forms of energy, including nuclear power, fossil fuels, biofuels, and "clean coal." It also extended existing subsidies, such as the renewable electricity production credit. Funding for many of these programs was significantly expanded in the American Recovery and Reinvestment Act of 2009 (ARRA), better known as the stimulus bill.

Despite the best efforts of experts to determine how much taxpayers are paying for renewable energy subsidies, there is no comprehensive estimate of their cost. A May 5, 2015 Massachusetts Institute of Technology (MIT) Energy Initiative report, "The Future of Solar Energy," found that "there is no authoritative compilation of total spending to support the deployment of solar technologies – at the national level or for any particular state – let alone a breakdown of total spending across subsidy programs."<sup>2</sup> A July 2015 University of California at Berkeley Energy Institute at Haas Business School study stated that the total tax expenditures for the four largest federal "clean energy" tax credits, which include the weatherization of homes, the installation of solar panels, and the purchase of hybrid and electric vehicles, had cost more than \$18 billion since 2006.<sup>3</sup>

Tax expenditures for alternative electricity generation cost \$13.7 billion from 2004-2015, with the investment tax credit (ITC) and production tax credit (PTC) accounting for \$11.5 billion of that total, according to the IRS.<sup>4</sup> However, the agency is not required to collect project-level data for either tax credit, so the total generating capacity supported by these tax expenditures is unknown. The LGP has more than \$40 billion available for loans, and the Section 1603 tax credits for renewable energy that were created in the ARRA cost taxpayers \$24.5 billion for 101,364 projects, as of July 30, 2015.<sup>5</sup>

## Background

Section 48 of the Internal Revenue Code (IRC), “Energy Credits,” provides a 30 percent credit for qualifying “energy property” placed in service before the expiration of the credit. The credit is allowed for the construction, or reconstruction of property generating electricity from qualified sources such as solar energy, geothermal deposits, or small wind energy. Facilities generating electricity from various other sources of renewable power are eligible for a 10 percent credit.<sup>6</sup>

Section 25D of the IRC, “Residential Energy Efficient Property Credit,” allows eligible applicants to take a 30 percent tax credit for qualified solar electric systems and water heaters, as well as fuel cells, wind, and geothermal heat pumps. These credits were first created in the 2005 energy bill and were slated to expire on December 31, 2007. However, the Tax Relief and Health Care Act of 2006 extended the credits for an additional year, and the Emergency Economic Stabilization Act of 2008 included an eight-year extension of both tax credits through December 31, 2016, eliminated the cap on the amount of the credit that could be taken for residential solar installations, and extended the credit to companies that paid the alternative minimum tax.<sup>7</sup>

In remarks on the floor of the House supporting what became known as the Hayworth Solar Power Tax Credit, which was then a 15 percent residential solar tax credit, former Rep. J.D. Hayworth (R-Ariz.) stated the intent of the credit was to “advance this important form of renewable energy. And in stark contrast to the protestations of my friends on the left, we are willing to embrace these technologies. It is proven by this solar energy tax credit.”<sup>8</sup>

During a 2008 campaign rally in Ohio, then-candidate Barack Obama promised to spend \$150 billion on renewable energy over 10 years, which he said would create 5 million new energy jobs. He said the jobs will “help us eliminate the oil we import from the Middle East in 10 years and help save the planet in the bargain. That's how America can lead again.”<sup>9</sup>

In 2014, the Institute for Energy Research reported that information from solar and wind organizations cited only 223,398 jobs, or “about 4 percent of President’s Obama’s 5 million job number for ‘green energy.’”<sup>10</sup>

On July 23, 2012, New Jersey Governor Chris Christie signed legislation mandating that New Jersey utilities purchase more renewable energy, which he stated would help to “meet our goals of increasing sustainability and protecting the environment,” and increase economic growth, while also allowing the state to “remain a national leader in the solar-energy industry.”<sup>11</sup> In August 2015, Christie signed legislation that expanded one of the subsidy policies, net energy metering, that is heavily relied upon by entities that lease solar panels to residential customers.<sup>12</sup>

Democratic presidential hopeful Hillary Clinton is playing to the pro-solar crowd with her climate change initiative, released on July 26, 2015.<sup>13</sup> The proposal’s provisions include some tall tasks: installing more than 500 million solar panels during her first term in the White House and producing enough renewable energy to power every U.S. home within 10 years of her taking office. Whether or not those goals are even remotely achievable, Mrs. Clinton is clearly establishing her support for renewables.<sup>14</sup>

Indeed, it is highly likely that she, or whoever put together her plan, knows what will happen to the ITC on December 31, 2016. The tax credit for commercial projects will drop to 10 percent and the residential credit will end outright. The considerable constituency of beneficiaries that has

become comfortable and dependent upon these tax credits will not quietly allow them to suffer that fate.

## Problems with Policy Itself

Publications and public remarks by renewable energy industry proponents are replete with allusions to the ITC as essential for these energy sources to vie effectively with fossil fuels, create jobs, and provide a fantastic return on “investment.”<sup>15</sup> In other words, the tax credits are all things to all people.

However, the MIT study, which aimed to shed light on “energy supply technologies that play important roles in electric power systems and on the electricity grid itself,” stated that “solar energy, the focus of this study, accounts for only about 1 percent of electricity generation in the United States and globally.”<sup>16</sup> The report makes a thorough and compelling case for why the ITC is bad economic policy and eviscerates most of the alarmist prognostications being pushed by ITC proponents, who allege that the reduction of the commercial tax credit to 10 percent at the end of 2016 represents an existential threat to the entire industry.

Regarding the claim that subsidies are essential to sustain the viability of solar as part of the nation’s energy supply, the report stated that “this argument rests on the assumption that even though the U.S. solar industry would be competitive in global markets with adequate investment, capital markets will not provide the necessary funding. But it has proven possible to raise large amounts of money for risky, long-lived investments in a wide variety of sectors - including projects that produce and use fossil fuels as well as others involving new technologies. We are aware of no evidence indicating that solar or other renewable technologies suffer any special handicaps that relate to the capital markets.”<sup>17</sup>

In regard to domestic job creation, the MIT researchers were similarly unimpressed, pointing to a shortage of rigorous studies supporting that conclusion. They wrote that “the notion that labor-intensive technologies deserve special support ignores the fact that labor-saving innovations have been major drivers of economic progress. The mechanization of agriculture destroyed many jobs, for instance, but it helped make large-scale industrialization possible. The main long-term effect of subsidizing labor-intensive technologies is to raise the cost of goods and services provided by the private sector. Finally, if the government were to seek to create jobs in the short term by subsidizing particular industries, it is not evident that choosing renewable energy, rather than, say, infrastructure construction or public education, would be the most cost-effective choice.”<sup>18</sup>

The authors also recognized that popular support for a particular program can be fleeting when juxtaposed against other priorities and necessary tradeoffs. They wrote that “it is easy for citizens to be in favor of government spending on renewably-generated programs when this spending is not linked to personal costs or to reductions in other programs they also support. Similarly, while people often respond positively to surveys asking if they are willing to pay non-trivial amounts for renewably-generated electricity, it is well known that the answers to hypothetical questions of this sort overstate real willingness to pay. Thus, even though ‘green power’ was available to about half of U.S. electricity customers in 2012, voluntary purchases of green power accounted for only 1.3 percent of total U.S. electricity sales in that year, with green power sales to residential customers accounting for only 0.3 percent.”<sup>19</sup>

A July 23, 2015, Congressional Research Service (CRS) report echoed the findings of the MIT report: “From an economic standpoint, tax incentives are effective if they succeed in causing taxpayers to engage in the desired behavior. In the case of residential energy efficiency tax benefits, it is not clear how effective such tax credits are at causing additional investment, as opposed to rewarding consumers that would have made investments absent tax incentives. Residential energy tax credits also tend to benefit higher-income taxpayers, an issue which is explored in detail below. ... If, however, tax credits simply reward consumers for investments that would have been made absent such tax incentives, then the tax incentives are not achieving the policy goal. Tax credits that reward consumers for residential energy-efficiency investments, rather than lead consumers to make additional residential energy-efficiency investments, provide a windfall gain to credit recipients without resulting in additional economy-wide energy-efficiency investment or reduced energy consumption.”<sup>20</sup>

The tax credits are not the only way in which solar energy benefits high-income taxpayers. They also disproportionately benefit from the practice of net metering (NEM), through which residential solar customers sell the surplus energy that they generate from rooftop solar panels back to the grid at retail rates, as opposed to the wholesale rate received by grid-scale generators. This results in added costs being shifted to the bills of non-solar utility customers, who are not disproportionately wealthy.

An October 2013 study on the cost-effectiveness of NEM by the California Public Utilities Commission Energy Division found that residential “customers installing NEM systems since 1999 have an average median household income ... of \$91,210, compared to the median income in California of \$54,283 and in the IOU [investor-owned utilities] service territories of \$67,821.”<sup>21</sup> In other words, the median household income of NEM customers was 34 percent higher than the median household income of other IOU customers and 68 percent higher than the median California household income. The commission also determined that the cost of NEM in 2012 was \$254 million, and it will increase to \$1.1 billion in 2020.<sup>22</sup>

In an October 27, 2015, article in *CommonWealth*, Charlie Harak, a senior attorney at the National Consumer Law Center in Boston, wrote, “While the environmental benefits are obvious and important, what we learned about costs was eye-opening. As a result of the current solar legislation and policies, National Grid and Eversource utilities, which serve about 90 percent of the state, will spend almost \$600 million combined in 2015 due to net metering and SRECs (the latter causing the lion’s share of the cost), and charge those costs to ratepayers. Yet that \$600 million procures for Massachusetts only about 2 percent of the kilowatt hours we use. Translated into real world impact, the average residential electric customer pays about \$10 a month more for that 2 percent of electricity coming from solar.”<sup>23</sup>

While the solar industry has disputed cost-shift and cost-benefit concerns, the leasing of solar panels themselves has caught the attention of members on both sides of the aisle on Capitol Hill.

On November 14, 2014, four Democratic representatives sent a letter to Consumer Financial Protection Bureau (CFPB) Director Richard Cordray expressing concern that “solar leasing companies may be overstating the economic benefits of signing a long-term solar lease while failing to disclose important information during the sales process.”<sup>24</sup> The letter made reference to the “no money down” long-term lease as an incentive to install rooftop solar panels and compared these leases to the easy money that was made available for subprime loans prior to the mortgage crisis. The letter

asked the CFPB to investigate whether misleading sales techniques are being used by the solar industry and whether consumers are being made aware of all of the terms of these transactions.<sup>25</sup>

On December 12, 2014, 12 Republican representatives asked Federal Trade Commission Chairwoman Edith Ramirez to look into potentially deceptive sales practices being used by some solar leasing companies that have been bundling solar leases – similar to the mortgage industry – as a way to leverage the ITC and state renewable subsidies to “obtain tax equity investment for the purposes of turning a profit.”<sup>26</sup> The letter reiterated the concerns expressed in the Democrats’ letter to the CFPB, noting that consumers may be committing themselves to a long-term lease without being aware of all relevant information, and that solar leasing companies may be “utilizing deceptive sales practices that overstate the savings that the homeowner will receive.”<sup>27</sup> In a more specific reference to the subprime mortgage crisis, the letter referred to the largest solar leasing company partnering with “a strategic sales company that sold a large number of subprime mortgages to unsuspecting homeowners in the run up to the subprime crisis.”<sup>28</sup>

The letter noted that these long-term commitments for “zero money down” solar leases were affecting the ability of homeowners to sell their homes, since “they were not fully aware of the terms of their 20-30 year lease commitments.”<sup>29</sup> Lawsuits have been filed in California and Louisiana “alleging fraudulent marketing and overstating potential savings” from these leases. A number of state attorneys general have issued consumer alerts to educate state residents about the financial pitfalls some consumers have experienced with these leases.<sup>30</sup>

In addition to the evidence of disproportionate benefits of NEM to high-income taxpayers and allegedly deceptive sales practices by solar panel companies, the doubts being raised about the ITC by advocates for solar power are causing problems for proponents of extending the ITC past December 31, 2016.

The GW Solar Institute notes on its website that “Many analysts believe the current regime of energy tax incentives is coming to an end” and that any “last-minute, stopgap extensions or changes to existing energy incentives ... would likely only postpone their inevitable expiration for a year or two.”<sup>31</sup>

Several countries have already taken steps to cut or phase out solar subsidies. Germany, which once called itself the “photovoltaic world champion,” had provided more than \$130 billion in solar energy subsidies by 2012. After recognizing that the subsidies were expensive and inefficient, the government announced plans to cut subsidies earlier than anticipated and phase out support completely over five years. Chancellor Angela Merkel’s staff referred to the policy as a “massive money pit” and the minister of economics and technology “called the spiraling solar subsidies ‘a threat to the economy.’”<sup>32</sup>

Other EU nations have also recognized that renewable energy subsidies, including solar, have become too costly and adversely affect their economies. Some governments “are unilaterally rewriting their contracts with renewable generating firms and reneging on the generous deals they initially provided.”<sup>33</sup> In 2013, France cut the “guaranteed rate” for solar producers by 20 percent. In Spain, after the government provided \$41 billion in subsidies for renewable producers, the government capped companies’ profits and eliminated subsidies for wind producers for projects built before 2005. Employment at solar companies dropped from 60,000 to 5,000, and solar investment dropped by almost 90 percent in 2013 compared to 2011, when it reached \$10 billion.<sup>34</sup> Even the Chinese have indicated that they will phase out key subsidies to their own solar industry by 2020.<sup>35</sup>

One of the largest solar companies, SolarCity, has been sending a mixed message on solar subsidies and especially the ITC. On July 12, 2012, the U.S. Partnership for Renewable Energy Finance released a report, authored by a senior associate with the structured finance group at SolarCity, citing the purported return to taxpayers on their investment in the ITC.<sup>36</sup> On June 1, 2015, the company's chairman of the board, Elon Musk, told CNBC that "none of the (solar) incentives are necessary, but they are all helpful."<sup>37</sup> In fairness to Musk, he also went on to split a hair in the same interview, arguing that the real value of tax breaks is to accelerate the adoption of solar power rather than to prop it up – a point somewhat in sync with the energy finance partnership study.<sup>38</sup>

## Renewable In Name, Unsustainable in Deed

If the solar industry could stand on its own without generous taxpayer subsidies, and arguably could have done so all along, then there was no reason to drag taxpayers into the game in the first place. If much or all of the industry needed a measure like the ITC to stay afloat, and still needs it even now, taxpayers were being sold a pig in a poke. In that case, taxpayers should never have been forced to pick up the tab, and should be relieved of the burden.

The potential demise of the ITC at the end of 2016 began to affect investors before the end of 2014. According to an October 22, 2014, Bloomberg BNA blog post,

"[a]t least two utility-scale thermal solar plants, including one planned by Oakland, Calif.-based BrightSource Energy Inc., have been mothballed amid uncertainty over whether companies would be able to qualify for the 30 percent investment tax credit (ITC), according to the Solar Energy Industries Association, a Washington-based trade group."<sup>39</sup>

In a February 20, 2015, Renewable Energy World.com article, Cinnamon Solar CEO Barry Cinnamon said that the end of the ITC's 30-percent tax credit for residential solar installations "will dramatically slow down sales for customer-owned systems."<sup>40</sup> In the same article, green-energy entrepreneur Jigar Shah predicted that, although the top players would continue to post impressive growth without the ITC, "the other 90 percent of players will go out of business in 2017 because they are simply not able to use software and tools to become more efficient."<sup>41</sup>

Solar Energy Industries Association Executive Director Rhone Resch offered the following appraisal in a keynote address at a March 2015 solar convention in Boston: "The reality is that we will lose 100,000 jobs if we lose the ITC—and these are conservative numbers. Ninety percent of solar companies will go out of business. ... Most of us in this room have jobs because of the solar ITC."<sup>42</sup>

In other words, the end of the ITC will weed out inefficient and underfunded solar companies and allow those that can stand on their own to remain in business. Shah's comments in particular support the end of the ITC rather than its extension.

The willingness of solar investors to jump into the fray is evidently not contingent on the feasibility of the technology or marketplace demand, but on whether Uncle Sam will stick around to pick up the tab.

Resch weighed in during his speech in Boston with a familiar argument that traditional fossil fuels long have been subsidized by tax and other public policies: "They aren't ramping down, so why should we."<sup>43</sup> But this argument misses the point: free market advocates support the elimination of subsidies for all forms of energy, including fossil fuels, so that every energy source can stand on its

own without taxpayer support, and consumers can choose whichever energy source they wish. If they support renewables and want to pay more, they should be able to do so; if they want to utilize something less expensive, they should have that choice.

To the extent that Americans support subsidies for new technology, they have an expectation that once the industry finds its footing, the subsidies should wind down. In other words, solar power at some point should be able to compete on a level field, and the date for that competition to begin should remain on schedule as December 31, 2016.

## Shining a Light on Solar Scheming

Indeed, the efforts to subsidize solar have not just failed to lower its cost, they have also led to waste, fraud, abuse and mismanagement. Perhaps these results were inevitable when the government created a new, lucrative program and provided little accountability.

There are of course the headline grabbers, such as Solyndra LLC, which became a poster child for all that can go wrong in a startup industry swaddled in federal tax dollars.<sup>44</sup>

Similarly, the meltdown of Abound Solar Manufacturing LLC is emblematic of what happens when self-styled visionaries in Washington's bureaucracy anoint the next presumed winner in an upstart technology. The solar-panel maker, which had facilities in Colorado and Indiana, filed for bankruptcy in 2012 after it was already \$70 million into a \$400 million federal loan guarantee.<sup>45</sup>

The Ivanpah Solar Electric Generating System in the southern California desert was financed with a \$1.6 billion loan backed by guarantees from the U.S. Department of Energy (DOE). After undershooting its million-megawatt-hour-a-year production goal, Ivanpah's backers blamed cloudy weather for the poor performance – and then asked the federal government for a \$539 million grant to help pay off the loan.<sup>46</sup> The proposed bailout has drawn howls of protest.<sup>47</sup>

The bureaucracies that administer solar loans and tax credits have been found to have mismanaged the programs through lax oversight and favoritism. Duplication of solar programs has led to wasteful spending. And, in a finding that will not be a surprise to anyone that understands the depths to which ineptitude can go in Washington, D.C., there has been double-dipping in loan guarantees and tax credits. These conclusions have been reached by private sector analysts and in numerous reports by government watchdogs, including the Government Accountability Office (GAO) and agency inspectors general.

A December 2013 Reason Foundation study found cronyism and other problems in DOE loan guarantees awarded to solar projects. Decisions on funding for solar projects were made on the basis of the information supplied by lobbyists, rather than on the basis of the viability of the technology and the soundness of the company applying for the subsidies.

The loan guarantees not only put taxpayer dollars on the line for major failures like Solyndra and Abound but also backed “a poorly diversified portfolio of mostly ‘junk’ grade investments, many of which, years later, are still ‘under construction.’”<sup>48</sup> The Reason report concluded that the DOE systematically made “loan guarantees to companies that are financially unsound” because “many recipients had close ties to those in charge of approving the loan guarantees.” These funds were “allocated ... broadly in proportion to applicants’ lobbying expenditures. In other words, it is likely that loan guarantees were allocated not on the merits of the projects but, rather, according to the degree to which the applicants were able to use political connections.”<sup>49</sup>

A 2012 GAO audit found program overlap among some 65 different federally-funded and-managed initiatives to support solar energy. More than half supported only solar projects while the remaining initiatives funded solar and other renewable technologies.<sup>50</sup>

The prevalence of solar energy projects in the 1603 program alone was noted in the August 3, 2015, Treasury report on the expenditure of funds under the stimulus. As noted above, as of July 30, 2015, the 1603 program had funded 101,364 projects totaling \$24.5 billion. Solar projects totaled 99,461, or 98.1 percent of the total number of projects. Subsidies to wind and solar comprised \$21.6 billion, or 88 percent of the total award amount.<sup>51</sup>

In October 2012, the Treasury Office of Inspector General (IG), as part of its ongoing oversight of stimulus programs, initiated an investigation into whether misrepresentations had been made in determining the fair market value of solar energy that received grants. In other words, the IG wanted to find out if the companies inflated the prices of the residential rooftop systems they were installing and for which, under Section 48 of the tax code, they were claiming the ITC on behalf of their investors.<sup>52</sup> The IG issued subpoenas to leading residential solar installers such as SolarCity, requesting documents dating back to 2007, including contacts with other solar energy development companies.

The IG also found in a 2011 audit that solar, wind, and other renewable-power developers were overpaid through the 1603 program.<sup>53</sup> In an October 26, 2011, Bloomberg article, an industry consultant and former investment banker noted: “A significant number of (renewable-energy companies in the 1603 program) no doubt have inflated costs. ... The road to Hell is paved with good intentions. This one’s a superhighway.”<sup>54</sup>

A November 2013 University of Colorado Economics Department study found that solar installers in a California sample “over-reported” the value of their solar installations by 10 percent, teeing up themselves and their investors for a commensurately inflated tax credit. The excess tax benefits totaled \$25 million between 2007 and 2011.<sup>55</sup>

On April 9, 2011, the Treasury Inspector General for Tax Administration (TIGTA) issued a report that found solar and wind ventures could be illegally double-dipping subsidies by claiming cash payments under the 1603 program while continuing to apply for Section 48 tax credits on their investments.<sup>56</sup>

A December 17, 2013, TIGTA report noted that “[t]he IRS has not developed a permanent process to identify taxpayers that have received Section 1603 grants and that may have erroneously claimed one of the two investment tax credits, the Energy Production Tax Credit or the Energy Investment Tax Credit, on the same property.”<sup>57</sup> With the intent of identifying and correcting such improper activity, the IRS initiated a Compliance Initiative Project (CIP), for taxpayers who received Section 1603 grants under the stimulus bill in 2009.

The CIP was originally scheduled to be completed in June 2013, but was subsequently extended to June 30, 2015. Although that deadline has clearly passed, the IRS has yet to release the results of its study. However, TIGTA reviewed a sample of the CIP’s preliminary results as of July 17, 2013, and found that more than 50 percent of the cases the IRS was examining had issues of noncompliance.<sup>58</sup>

## Conclusion: The Sun Must Set on Solar Subsidies

The irony of the years-long stream of government solar subsidies, epitomized by the ITC and the 1603 program, is that they may well have masked (and derailed) whatever potential solar power may have to augment the nation's energy portfolio. These policies have induced solar investors and providers to view the programs as essential; however, they may also be an obstacle to the industry's own progress. As watchdog groups have noted for many years, when government decrees winners and losers in the energy industry or just about any other economic sector, taxpayers all too often wind up carrying the losers.

What's more noteworthy, though, is that pointed challenges to the subsidized status quo are coming from within the industry itself. Some solar CEOs seem to have been able to shake off the numbing effect of dependence on the government and have opened their eyes to the promising potential of a real, competitive playing field that does not depend on the kindness of taxpayers. They have broken ranks and are speaking out against perpetual subsidies.

Enphase Energy CEO Paul Nahi suggested in a February 14, 2013, commentary in *Forbes* that "subsidies are a useful tool to help establish an emerging industry. But where there is no projected end to funding, subsidies stop being a catalyst, and start becoming a crutch. This is especially true when companies supported by subsidies become powerful enough to influence governments to perpetuate their support. ... Healthy companies depend upon sound business models in a competitive environment. Lousy companies that are limping along on subsidies will slow the growth of the industry."<sup>59</sup> He concluded that "a robust, renewable energy market will remain hampered if the energy industry continues to chase the next subsidy. For the good of our energy future, subsidies for all energy must eventually end."<sup>60</sup>

In his January 13, 2015 commentary in *Clean Technica*, Greenwood Energy CEO Camilo Patrignani noted that "America's wind industry has suffered boom-and-bust cycles from Production Tax Credit reauthorization uncertainty, leaving analysts to ask if solar will suffer the same fate. So here's a proposal: Let's prevent a tumultuous future by reducing the ITC to 10 percent in 2017 and letting it expire in 2018. This may seem ironic for a solar CEO, but we won't need the ITC if we're given a smooth glide path to prepare as an industry."<sup>61</sup>

Although subsidies doled out by Congress can become as ensconced as Washington's monuments, there is an encouraging precedent for ending the ITC. The other icon of tax support for renewable energy, the windmill, was set free from the federal dole and sent out to seek its fortune when Congress allowed the wind production tax credit to expire at the end of 2014. A bid to restart the credit in the spring of 2015 was shot down in the Senate after even wind-state senators agreed to let wind power sink or swim on its own.<sup>62</sup>

The least Congress can do is lower the boom on an up-front subsidy like the ITC. Like the wind PTC, it has yet to deliver on promises that it will help to foster a sustainable, reliable, credible component of the U.S. energy portfolio. Indeed, it will not be clear that the power of the sun is viable in helping to power America's homes and businesses until its federal purse strings are severed, setting free the solar industry and taxpayers.

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<sup>1</sup> <https://www.congress.gov/bill/109th-congress/house-bill/6>.

<sup>2</sup> "The Future of Solar Energy," An Interdisciplinary Study led by the MIT Energy Initiative, Massachusetts Institute of Technology, Boston, Massachusetts, May 5, 2015, p. 222, <https://mitei.mit.edu/futureofsolar>.

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