Why Congress Should Extend the Expiring Solar Energy Investment Tax Credit

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The solar energy industry is booming in the private sector for both commercial and residential uses, yet the true power of solar energy is often overlooked or misunderstood. A number of federal agencies, including the world’s largest energy consumer—the Department of Defense (DOD)—have taken a leading role in promoting and utilizing solar energy while also educating the public and future job seekers about solar power. The upcoming expiration of the solar energy investment tax credit will create a fallout that will be felt around the world.

From the cup of coffee you brewed this morning to the bright computer screen with a full inbox that rudely greeted you on your arrival to the office, the power of energy is sustaining life as we know it. Energy is always impacting our daily lives, but for most of us, it isn’t something we regularly notice. Much like our ever-beating hearts, we only notice energy when it stops.

The solar energy investment tax credit (ITC) is set to stop at the end of 2016. Whether the majority of Americans are aware of it or not, the negative effects of its expiration will ripple across our nation.

Enough energy from the sun hits the earth every hour to power our planet for an entire year. In recent decades, many Americans have capitalized on the sun’s energy by turning it into electricity that powers everything, including homes, hot water heaters, irrigation systems, and battlefield operations in deployed locations. To incentivize the use and development of this renewable energy resource, Congress passed the solar energy investment tax credit. The solar energy ITC—found in 26 U.S.C. § 48 (for commercial property) and 26 U.S.C. § 25D (for residential property)—works like this: When individuals and businesses spend money on qualified solar electric property, 30 percent of the cost may be taken as a credit against any federal taxes owed for that year. The ITC is “arguably America’s most important solar [energy] policy.” Since its implementation, the ITC has “spurred 1,600 percent annual growth … and turned solar into an economic engine.” The three primary forms of solar energy technology utilizing the credit are photovoltaic (PV), concentrating solar power (CSP), and solar water heating (SWH).

Yet after Dec. 31, the solar energy ITC will be zeroed out for individuals and reduced to a mere 10 percent for businesses. Many industry professionals and government officials warn that this will hamstring the previously explosive growth of the solar industry. Why is that a big deal? We’ve all heard that solar energy is a renewable energy source, so is the loss of the solar ITC merely an environmental issue? Not at all.

The impact of the solar energy industry is felt across our nation by individual homeowners, job seekers, small businesses, federal agencies, and military members, to name a few. To be sure, the positive impact of renewable energy sources on the environment is substantial. In 2014 alone, “U.S. solar energy systems displaced more than 20 million metric tons of carbon emissions. That’s the same as taking 4 million cars off U.S. roads for a year.” Nonetheless, solar energy contributes more to our world than just cleaner air; it impacts millions of individuals and homeowners every year. Even if solar was once accused of being merely a novelty energy source, it can no longer be relegated to simply warming a seat on the sidelines. An estimated 20 gigawatts (GW) of solar were installed in the United States by the end of 2014, “enough to power the equivalent of 4 million average American homes.” Of all new electricity-generating technology that became operational in 2014, solar represented 32 percent, which was more than any other renewable energy resource.

Job Seekers in the Solar Age

In addition to the environmental and residential energy market impacts, job seekers have also benefited from the rapid growth of the solar industry, which currently employs upwards of 175,000 people. As a recent White House fact sheet explained, “The solar industry is adding jobs 10 times faster than the rest of the economy.” Said another way, out of every 78 new jobs created in our nation, one was a solar job—putting the solar industry in first place as “one of the fastest-growing industries in America.” Along with jobs, investment dollars slated for solar industry projects have increased tremendously since the 2008 extension. The Department of Energy (DOE) alone has invested approximately $2.3 billion on research and development to advance solar PV technology, citing a return of economic benefits at more than $15
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In the last seven years, the DOI has granted permits for 29 utility-scale solar energy projects (52 renewable energy projects total), with power-generation capacity of more than 14,000 megawatts. “If built as planned, these projects would provide more than 21,000 jobs and power more than 4 million homes.”

than 5 billion gallons of oil (most of which is sourced outside our borders), it is easy to see why an increasing reliance on locally sourced, renewable energy will provide greater national security.

Addressing the environmental correlation with national security as well, the DOD released its 2014 Climate Change Adaptation Roadmap stating, “In our defense strategy, we refer to climate change as a ‘threat multiplier’ because it has the potential to exacerbate many of the challenges we are dealing with today—from infectious disease to terrorism.” Additionally, in a directive released in 2014 (the first energy policy initiative announced by the agency in 20 years), the DOD stated that its policy is “to enhance military capability, improve energy security, and mitigate costs in its use and management of energy.” Though the DOD has not yet reached its 25 percent goal, it has made significant progress, and solar energy played a role. Across the 500-plus installations the DOD manages around the world, about 11 percent of the total renewable energy produced comes from 645 solar PV systems. Combined, “the Army, Navy, and Air Force have installed more solar than 37 different states.”

In its role as the world’s leading energy consumer, the DOD has the power to drive the solar energy marketplace through its procurement decisions alone. Arguably, the solar ITC contributes to a thriving energy marketplace by lowering the cost of entry for a diverse cross-section of small and large businesses. Greater competition typically results in an accelerated pace of innovation, and lowered cost per unit of electricity. Since 2011, the average cost to complete a PV unit has declined by more than 40 percent. Similarly, the cost per watt of residential solar was $9 in 2006. According to Kurios Energy, a solar company based in northern California, the current price per watt of residential solar is between $3.50 and $4—and that is without factoring in any credits or rebates.

Generally, the military has used three financing structures to develop solar projects, including power purchase agreements (PPAs), enhanced-use leases (EULs), and energy savings performance contracts (ESPC). Although most federal agencies are limited to a 10-year term when entering solar contracts, pursuant to Title 10 U.S.C. § 2922A, branches of the DOD are permitted to enter an energy contract for up to 30 years. This gives the military even greater flexibility to negotiate the most affordable energy rates. As a nontaxable entity, the military can only monetize tax credits through financing relationships with third parties. The PPA model is particularly attractive because it allows a private solar company to design, build, and finance a solar project, from which a local military installation can then purchase the generated power at discounted rates, yet the private company holds the risk for system upkeep and performance. The DOD, the already-changing climate, and the residential energy consumer alike stand to benefit from more affordable, greener, and more efficient power.

The DOD is not alone in supporting the solar and renewable energy industry. The Department of Interior’s (DOI) goal, as outlined in the Climate Action Plan, is to “permit enough renewable [energy projects] on public lands by 2020 to power more than 6 million homes.” In the last seven years, the DOI has granted permits for 29 utility-scale solar energy projects (52 renewable energy projects total), with power-generation capacity of more than 14,000 megawatts. “If built as planned, these projects would provide more than 21,000 jobs and power more than 4 million homes.”

Also on the job front, the DOE recently launched its SunShot Initiative, which aims to train 200 veterans for solar jobs. The SunShot Initiative, which aims to train 200 veterans for solar jobs. The SunShot Initiative, which aims to train 200 veterans for solar jobs.

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Initiative uses the latest PV technology to teach veterans how to size and install solar energy systems, how to connect electric-ity to the grid, and how to interpret local building codes. In these efforts, the DOE collaborates with the departments of Labor, Education, Housing, and Urban Development; the National Science Foundation; and Veterans Affairs.

**Life Without the Solar ITC**

Does the expiring solar ITC really affect all this? Many industry experts would argue that it does, at least in the near term. (The feeling of déjà vu should come as no surprise for those who were involved in arguing for the credit’s first major extension in 2008, as the current debate is largely a rhetorical rinse and repeat.25) Significant changes are sure to be felt if the solar ITC expires, and the blow to jobs and small businesses is probably going to smart the most. Experts in the solar industry have predicted that if the solar ITC expires, about 100,000 jobs will be lost, and 90 percent of all solar companies—approximately 7,000 companies—could go out of business.26

Despite the rhetorical familiarity, the 2008 credit renewal period was a proving ground of sorts, and with the upward growth trajectory of the solar energy industry in the last eight years, the road ahead, if the ITC is extended, doesn’t have to be all guesswork. The solar industry has swept the nation in a relatively short period of time. In 2006, only about 30,000 homes had solar panels. In 2013, 400,000 homes had solar. In February 2016, more than 1 million U.S. homes will have solar. By 2020, a mere four years later, an estimated 3.8 million homes will be solar powered.24 Solar has grown from an $800 million dollar industry in 2006 to a $15 billion dollar industry today.25 Looking forward, between 2016 and 2022, a projected $124 billion dollars will be invested in the U.S. economy from residential, commercial, and governmental solar energy projects. If the solar energy ITC is not extended, then that number is anticipated to drop by nearly $35 billion. On the other hand, if the solar energy ITC is extended through 2022, the solar industry will generate enough electricity to power 19 million homes, accounting for 3.5 percent of all electricity generation in the United States (up from just 0.1 percent in 2010).26 If the solar energy ITC is extended, solar power around the world would offset 100 million metric tons of carbon dioxide emissions each year for every year the solar energy ITC is extended—the “equivalent to shuttering 28 coal-fired plants or taking 20 million cars off the roads.”27

**The Way Ahead: Which Road To Travel?**

Even among those who stand to benefit from the extension of the solar energy ITC, namely solar energy industry producers and consumers, the reaction to the upcoming solar energy ITC cliff is mixed. Many constituents support a wholesale extension of the ITC through 2022, or at the very least, a legislative amendment to the provision to include a “commence construction” clause. Others are simply planning for the worst (the expiration of the ITC) while hoping for the best (an extension), and there are even those who work within the solar energy industry who are nevertheless calling for the permanent expiration of the credit.

**Plan for the Worst, or Push for a Permanent Expiration?**

Dire predictions aside, the outlook for the solar industry is still fairly bright, even with a worst-case-scenario outcome. Industry experts admit that solar will continue to grow without the solar energy ITC, albeit at a much slower pace. Because the residential solar energy ITC will be completely zeroed out in 2016, the most vulnerable industry members are arguably the small, residential installers. Accordingly, they are encouraged by other industry professionals to streamline their business models, automate processes as much as possible, and generally lower overhead and the cost of doing business in order to survive in leaner times.28 The idea is to maximize profits as much as possible before the cliff. As one tech CEO quipped, “Grab market share with the remaining 30 percent tax credit while also preparing for the hangover in 2017.”29

Somewhat counterintuitively, others who stand to benefit from the ITC extension are arguing for its expiration. Many utility companies see expanding solar as a threat. Residents whose homes are equipped with solar technology sell some of the power they generate back to the grid in a practice known as net metering. This growing practice is being challenged by established utilities that want to protect their profit margins. Additionally, some well-established solar companies support the expiration because it would force the industry to become leaner and more efficient, and it would push out competition by the smaller businesses, which may not be able to operate without the 30 percent credit.30 As one solar CEO explained, the future of the ITC is uncertain, and the industry would be better off if all subsidies were gradually reduced. That way, market forces, rather than federal tax credits, would drive incentives and pricing.31

**Advocating for ITC Extension**

Proponents of the ITC extension argue for a bold stroke from Congress similar to that which passed in 2008—a complete extension of the credit for another eight years. Signaling his support of renewable energy, Obama’s FY 2016 budget included provisions for a permanent extension of the ITC.32 Energy parity is a primary argument for the extension, as fossil fuels receive more than four times the amount of subsidies doled out to renewable energy sources.33 The average annual subsidy for oil and gas is $4.8 billion, compared with only $370 million for all forms of renewable energies.34 The solar ITC is the sole federal tax incentive that benefits solar energy.

At the very least, some are pushing for the insertion of a “commence construction” clause in the current legislation. The current language of the ITC only permits taxpayers to claim the credit starting in the year when the qualifying solar electric property becomes fully operational, or is “placed in service” and therefore capable of generating power.35 This means that some large-scale solar energy projects that begin before the ITC expires but are not completed before Dec. 31, will fail to qualify for the 30 percent credit. As drafted in one version of proposed legislation, projects would be eligible for the credit if they were “meaningfully under construction” before Dec. 31.36 The proposed legislative fix raises additional questions, however, such as what “meaningfully under construction” really means or when the taxpayer could begin to claim the credit.

Notwithstanding the to-be-determined specifics of potential laws, experts predict that the “commence construction” legislative change “would drive 4,000 MW of solar capacity and create tens of thousands of new domestic jobs.”37 And without a “commence
construction” clause, the industry needs legislative change sooner rather than later. For solar energy projects to qualify for the credit before Dec. 31, they must be placed in service by then, which means that all of the necessary project elements (including securing investment dollars, permits, contracts, etc.) should be lined up months in advance. Yet, as always, industry investors and developers want clarity on what type of property actually qualifies for the credit, and they want that clarity before investment.

New Rule-Making, Even Without New Law
Perhaps in anticipation of an upcoming extension, the IRS and the Department of Treasury issued a notice seeking public comment on the definition of qualifying energy property outlined in 26 U.S.C. § 48, the section of the solar energy ITC pertaining to commercial projects. Although section 1.48-9 of the Income Tax Regulations adds some clarity to the definitions of qualified energy property outlined in 26 U.S.C. § 48, the regulations were last updated in 1987, before much of the current solar energy technology was developed. (For a dose of perspective, recall that the World Wide Web was invented in 1989.) The timing of the call for comments does seem odd given the impending ITC cliff, but even if the solar energy ITC for commercial projects drops to 10 percent, up-to-date regulations with clarifying language will benefit the industry.

An Active-Duty Perspective
As an active-duty military service member and federal lawyer, my thoughts obviously do not represent the perspective of the DOD. Nonetheless, it is hard not to get behind the many advantages of solar energy for our warriors on the battlefield. Traditionally, service members at deployed locations have had to use noisy generators powered by fossil fuels. The addition of solar energy as a viable option means fewer generators and providing bases with dependable power that is easily portable; fewer generators and providing bases with savings without a price tag.

Action Is Needed Before the Sun Sets
Absent legislative action, at the stroke of midnight on Dec. 31, the solar energy ITC will stop completely for residential projects and be reduced from 30 percent to 10 percent for commercial projects. Given the amazing potential for solar energy to transform the energy landscape, Congress should act fast to extend the ITC if it wants to maintain the solar industry’s momentum. Regardless of one’s perspective on the proposed extension, and despite the most comprehensive contingency plans, if nothing is done to preserve the solar energy ITC, then as the sun rises on Jan. 1, the effects of the loss of the solar ITC will be felt across our nation and around the world.

Endnotes
7The SunShot Initiative, supra note 4.
8Id. for Supporting Solar Workers
10Office of the Deputy Undersecretary of Defense for Installations and Environment, Dep. of Defense 2014 Climate Change Adaptation Roadmap, 2 (June 2014), available at www.acq.osd.mil/osd/download/CCARprint_w Foreword_c.pdf (“Rising global temperatures, changing precipitation patterns, climbing sea levels, and more extreme weather events will intensify the challenges of global instability, hunger, poverty, and conflict. They will likely lead to food and water shortages, pandemic disease, disputes over refugees and resources, and destruction by natural disasters in regions across the globe.”)
13SEIA, Enlisting the Sun, supra note 10, at 4.
14Id. at 7.
also White House Fact Sheet, supra note 6 (“In 2013 alone, the price of commercial and residential solar declined by more than 12 percent.”)

17SEIA, Enlisting the Sun, supra note 10, at 9.

18Id. Energy contracts with 30-year terms require DOD approval, whereas energy contracts with terms between 10 and 20 years may be entered into without the approval of the DOD.

19Id. at 9.

20White House Fact Sheet, supra note 6.

21The SunShot Initiative, supra note 4.

22Runyon, supra note 3 (“Navigant Consulting released the results of its new economic study … indicating that more than 1.2 million employment opportunities and US $232 billion in investment would be supported by the U.S. solar energy sector alone through 2016 if Congress extends the solar investment tax credit for 8 years.”)

23Bryan Miller, Sunrun: Conservative Support for Solar Puts ITC Deal Within Reach This Year, Green Tech Media (Oct. 13, 2015), www.greentechmedia.com/articles/read/sunrun-conservative-support-for-solar-puts-its-deal-within-reach-this-year (citing a recent analysis from Bloomberg New Energy Finance and the National Renewable Energy Laboratory, which indicated that about 7,000 U.S. small businesses would close and approximately 100,000 jobs would be lost without the solar ITC).


30Cargill, supra note 28.


33Miller, supra note 23.

34Resch, supra note 25.

35Sen. Michael Bennet (D-Colo.), Bennet, Heller Introduce Bill To Accelerate Solar Energy Development, (Feb. 6, 2014), www.bennet.senate.gov/?p=release&id=247. 26 U.S.C. § 48(a)(3)(B) alternatively provides that if the taxpayer acquires the property, the original use of the property must commence with the taxpayer for that taxpayer to be eligible for the credit.

36Id. in another bill introduced in the House by Rep. Mike Thompson, (D-Calif.), the Renewable Energy Parity Act of 2013, H.R. 2502, 113th Cong. § 1 (June 25, 2015, referred to the House Committee on Ways and Means), the language is simply “property the construction of which begins.”

37Cargill, supra note 28.


39Notice 2015-70, 2015-42 IRB.


41SEIA, Enlisting the Sun, supra note 10, at 6.

42Id. at 7.

43Id. at 8.