January 17, 2014

The Honorable Max Baucus
Chairman
Committee on Finance
United States Senate
219 Dirksen Senate Office Building
Washington, DC 20510

Chairman Baucus:

The Solar Energy Industries Association ("SEIA") is the national trade association for the U.S. solar energy industry. On behalf of our 1,000 member companies and the more than 119,000 American taxpayers employed by the solar industry, we appreciate the opportunity to submit comments on the Senate Finance Committee's Energy and Cost Recovery Staff Discussion Drafts and explain how the proposed legislation would impact the solar industry, its workers, and the consumers that benefit from using solar energy.

**INTRODUCTION**

First, SEIA wants to thank you and your staff for the tremendous effort you have made to reform the nation's tax code to make it less complicated and more competitive. As you know, federal policy has for decades provided a legislative and regulatory framework that has helped every major source of energy in the U.S. reach commercial scale. History has shown that well-crafted and efficient federal tax incentives can provide powerful policy mechanisms to promote the nation's energy objectives and leverage private sector investment for the deployment and utilization of new energy resources. Today, federal renewable energy policies are largely carried out through the tax code, and tax incentives have played a vital role in developing new domestic energy resources to power America's long-term economic prosperity and growth.

The success of the solar industry in utilizing the Solar Investment Tax Credit ("ITC") and the Modified Accelerated Cost Recovery System ("MACRS") is a testament to existing tax policy. By any objective measure, these current provisions are doing exactly what they were meant to do – allowing our nation to reap the significant energy, economic, national security and environmental benefits associated with utilizing our abundant solar resources. Since the introduction of the 30-percent commercial and residential solar ITC in 2006, domestic deployment of solar has increased twelve-fold, the cost to homeowners and businesses has dropped significantly, and the solar industry has grown from a niche market to a value chain that today employs over 119,000 Americans at 6,100 companies.

We appreciate your understanding that certainty is essential for the growth of new industries. We welcome the long-term certainty that the Energy Staff Discussion Draft provides for parts of the solar industry by retaining a 20 percent commercial ITC for the foreseeable future after 2016. Nevertheless, we believe that the combination of replacing MACRS with a depreciation system based on economic

lives, allowing the residential solar ITC to expire, and excluding solar heating and cooling from the revised post-2016 ITC puts the continued growth of the solar industry in significant jeopardy.

**MODIFIED ACCELERATED COST RECOVERY SYSTEM**

The solar industry benefits from the Modified Accelerated Cost Recovery System ("MACRS"), which allows businesses to deduct the depreciable basis of solar energy property over five years.[1] Solar power projects have been subject to the "200% declining balance" recovery method, providing for the greatest depreciation in the first year and declining over time. Under the proposed cost recovery system in the Cost Recovery Staff Discussion Draft, solar energy property would fall into Pool 4. This pool has the lowest recovery rate – five percent per year – of any of the four pools.

**The Proposed "Pooling" Cost Recovery Method Would Not Attract, and May Dissuade Private Investment in Solar**

SEIA supports your effort to make the U.S. a more business friendly and competitive tax environment. We are concerned, however, that the proposed new cost recovery system would not attract, and may actually discourage, private investment in solar projects.

MACRS' acceleration substantially reduces the time period in which capital expenditures are recovered, which is especially important for solar projects where high capital costs are generally incurred upfront. Moreover, unlike fossil fuel-powered generation, 100 percent of a solar project's "fuel" cost is paid for all at once, at the beginning of a project. Therefore, it is reasonable to apply a front-weighted depreciation treatment such as MACRS to solar property. In addition, MACRS' faster return of capital may lower the risk premium, thus making a new investment more attractive.[2] In the solar industry, this faster return of capital has helped drive private investment in solar while lowering costs for consumers and stimulating the economy. Because the proposed pooling system extends the time period in which capital expenditures are recovered to the lifetime of the property, it will disproportionally impact assets, like solar power property, that have shorter depreciation periods under current law. For example, SEIA's analysis[3] shows that under the Pool 4 cost recovery system and a 20% ITC, the point in time at which the investor receives half of his return on a project is extended more than two years. In other words, under the proposed cost recovery system and a reduced ITC, it will take significantly longer for an investor to recover his investment in a project, which means the comparable risk-free rate for the investment should go up, necessitating an increase in the required yield for the project, and making it harder to finance.

Currently, the depreciation on a solar project is worth about 23 cents per dollar of capital cost if the 30% ITC is claimed on the project, assuming a 35% tax rate and using a 10% discount rate. Depreciation under the proposed cost recovery method would be worth only 11-13 cents with a 30% ITC.[4] Moreover,

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[1] I.R.C. § 168(e)(3)(B)(vi).

[2] "MACRS Depreciation and Renewable Energy Finance," US PREF, November 2013, at p. 5, *available at* http://uspref.org/images/docs/MACRSwhitepaper.pdf.

[3] In response to the Discussion Drafts and in order to substantively demonstrate the detrimental impact of the proposed legislation on the solar industry and consumers, SEIA and its members used three different models that analyzed representative projects in several states ranging in size from less than 1 MW to 20-plus MW.

[4] Keith Martin, "U.S. Tax Changes Start to Take Shape," Chadbourne & Parke LLP Project Finance NewsWire, December 2013, at pp. 13-14, *available at* http://www.chadbourne.com/files/Publication/49eed34c-3a59-4a26-

in a concentrating solar power project, for example, over 90% of the cost basis of the project is currently eligible for 5-year MACRS. Thus, not only would depreciation be worth almost half as much under the proposed cost recovery method, this cost recovery change would impact the vast majority of assets that comprise a solar power project. This is likely to discourage future investment in solar property.

Finally, given the impact that eliminating MACRS would have on solar projects, the Solar ITC would need to be significantly increased in order to attract private investors to continue to provide the tax equity financing critical to most solar energy projects. Per the Finance Committee Staff's query as to how tax incentives should be adjusted in light of the proposals in the Cost Recovery Discussion Draft, SEIA's models determined that the Solar ITC would need to be increased from its present 30% to 42-46% for solar projects to continue to be economically viable and attractive to private investors under the pooling system, assuming a 28% corporate tax rate. However, as will be discussed below, the Energy Discussion Draft would instead change the Solar ITC from its current 30% level to 20% after 2017, making the impact of the pooling system even more detrimental to the solar industry.

**The Proposed Cost Recovery Method Would Increase Consumers' Electric Bills**

The proposed cost recovery method would not only decrease the economic viability of a project, making it a riskier investment and thus incurring higher financing costs, but the new pooling system would also increase solar's cost to consumers. One of SEIA's models found that a proposed utility-scale project's PPA price would have to rise over 20% to recover the loss of MACRS. Assuming a 28% corporate rate, the PPA price would have to increase almost 36% relative to present law to recover both the loss of MACRS and the reduction of the ITC from 30 to 20 percent.[5] When looking at the levelized cost of energy ("LCOE"), our models found that the LCOE for a given project would increase 34-48% under a 20% ITC, with Pool 4 recovery rate and a 28% corporate tax rate.[6] This would be devastating for consumers.

The solar industry has worked tirelessly to decrease its costs and make its products and electric/thermal output more affordable. In fact, the average price of a solar panel has declined by more than 60 percent since the beginning of 2011, and significant cost reductions have occurred in just the last three years with the scaling up of demand and manufacturing capacity. In 2009, the average installed cost was approximately $7.50 per watt. In 2011, the overall average installed cost was $4.75 per watt. The downward trend in cost has continued for an average installed cost (for utility-scale, commercial and residential PV projects combined) of $3.00 per watt in Q3 2013.[7]

These remarkable cost decreases combined with unique financing mechanisms that have developed in the industry in recent years have made solar more affordable for all Americans. A recent report looking at the Arizona, California and New Jersey solar markets found that solar installations are growing rapidly

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[5] These percentage increases in the PPA price are exclusive of the developer's margin. Thus, if developers are to make any profit off of a project, the PPA price would have to be higher than the increase cited here.

[6] This is compared to a project which uses a 30% ITC and five-year MACRS.

[7] "U.S. Solar Market Insight Report," GTM Research and SEIA, Q3 2013, at pp. 14-15, *available at* http://www.seia.org/research-resources/us-solar-market-insight.

in middle-class neighborhoods that have median incomes ranging from $40,000 to $90,000.[8] In fact, the areas that experienced the most growth from 2011 to 2012 had median incomes ranging from $40,000 to $50,000 in Arizona and California and $30,000 to $40,000 in New Jersey.[9] Middle class Americans are seeing the economic benefits of solar on their monthly electric bills.

To continue significant price decreases, the scaling up of demand and manufacturing capacity needs to continue. The loss of MACRS would increase the cost of solar power installations, and any increase in cost, no matter how incremental would hinder the growth of solar. This is especially true among middle class Americans who are seeing the economic benefits of solar on their monthly electric bills.

**Changing Cost Recovery Methods Requires a Transition Period**

Congress usually includes transition rules when modifying the tax code to accommodate companies that have already made investments or binding commitments to invest in assets prior to the tax code changes becoming law. As Senate Finance Committee Staff correctly note, businesses have made significant decisions based on the current depreciation system. We are concerned that no transition rules have been included here.[10] The proposed pool system would go into effect beginning in 2015, two years before the Solar ITC expires at the end of 2016 and, as proposed, would apply to existing investments. A number of utility-scale solar projects have been placed in service over the past two years for which the economic viability of the projects was predicated, in part, on 5-year cost recovery – and a number of other large projects are expected to come online in 2014. Under the Staff Discussion Draft, all of these projects would have their depreciation tax treatment changed retroactively. In addition, many companies entered into deals years ago for projects that will be placed in service over the next three years that were negotiated around, among other things, the continuation of 5-year MACRS. The proposed cost recovery method would dramatically change the economics of those deals by imposing the pool system in years where investors were counting on 5-year MACRS. We are concerned with the fairness of retroactively changing the rules for existing investments that were made in good faith reliance on MACRS, as well as the fairness of changing the rules for projects under construction that will be placed in service before the current law ITC expires at the end of 2016.

Finally, the existing, MACRS rules provide that 100% of the value of a tax credit would reduce the project's depreciable basis.[11] However, for equipment on which the ITC is claimed, the owner must reduce the project's depreciable basis by one-half the value of the ITC.[12] Neither the energy draft nor the depreciation draft appears to preserve this 50% offset rule. This further detrimentally impacts the solar industry.

SEIA looks forward to working with Committee Staff to develop a cost recovery method for solar assets that would provide the business certainty the industry needs while also encouraging private investment and ensuring consumers do not foot the bill. At a minimum, SEIA requests that you establish transition rules that would allow companies to continue to use MACRS for projects that begin construction or have binding written contracts (e.g., PPAs) as of December 31, 2016 when the 30% solar ITC expires. Any

[8] Mari Hernandez, "Solar Power to the People: The Rise of Rooftop Solar Among the Middle Class," Center for American Progress, Oct. 21, 2013, at pp. 1-2, *available at* http://www.americanprogress.org/wp-content/uploads/2013/10/RooftopSolar-4.pdf.
[9] *Id.*
[10] "Summary of Staff Discussion Draft: Cost Recovery and Accounting," at p. 12.
[11] IRC § 50(c).
[12] IRC § 50(c)(3).

projects that do not have a binding written contract starting in 2017 would be subject to a new depreciation system. This transition is merely two years longer than Staff's proposed effective date of 2015, and would ensure that parties in deals which were entered into long before this cost recovery proposal was drafted, as well as deals that are currently being negotiated, can rely on the MACRS system that was created almost thirty years ago.

**THE INVESTMENT TAX CREDIT**

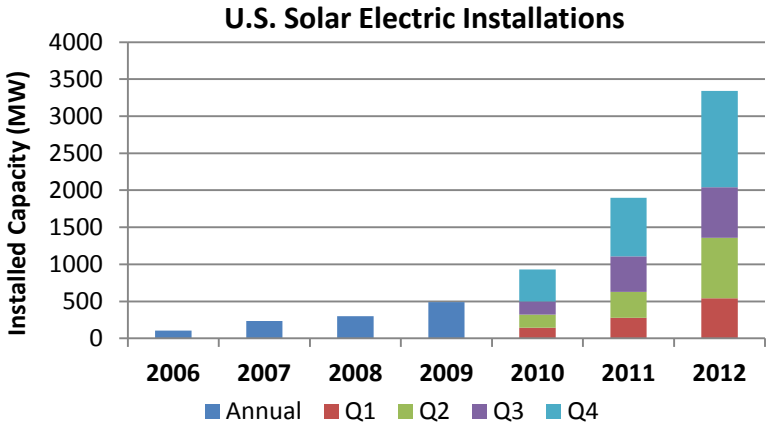
The Energy Discussion Draft proposes eliminating 11 current energy-related tax incentives and replacing existing incentives after the end of 2016 with a production tax credit ("PTC"), an investment tax credit ("ITC"), and a clean transportation fuel tax credit. After 2016, the PTC would remain at its current rate of 2.3 cents/kwh and would be annually indexed for inflation, while the ITC would be set at 20%. In addition, the current Section 45 PTC would be extended through the end of 2016. Meanwhile, the current Section 48 ITC and Section 25D residential credit would be allowed to continue until their current expiration date at the end of 2016. However, starting in 2017, residential users would no longer be able to receive the ITC.

**Changing the Investment Tax Credit to 20% Decreases Solar's Competitiveness**

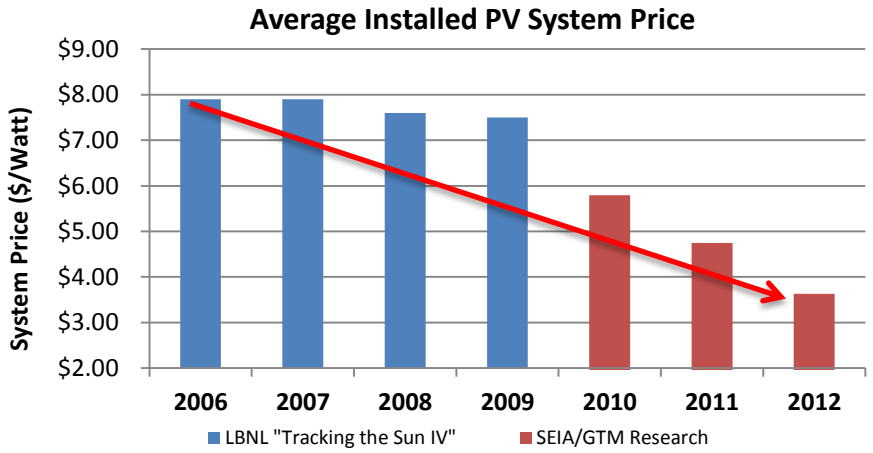
The *Energy Policy Act of 2005* (P.L. 109-58) created a new 30 percent ITC for commercial and residential solar energy systems that applied from Jan. 1, 2006 through Dec. 31, 2007. The ITC was extended for one additional year in December 2006 by the *Tax Relief and Health Care Act of 2006* (P.L. 109-432). In its first year of implementation, the 30 percent ITC spurred unprecedented growth in the U.S. solar industry and led to the doubling of installed solar electric capacity by 2007. By then, global investment in clean energy topped $100 billion, with solar energy leading all other clean energy technologies in venture capital and private equity investment.

In 2008, Congress passed legislation on a bipartisan basis that provided an eight-year extension of the commercial and residential solar ITC. By any objective measure—installations, jobs, and price—the ITC has accomplished exactly what Congress intended.

The market certainty provided by a multiple-year extension of the residential and commercial solar ITC has helped annual solar installations grow by over 3,000 percent since the ITC was implemented in 2006 – a compound annual growth rate of 77 percent. The U.S. now has over 10,250 MW of installed solar electric capacity, enough to power more than 1.7 million average American households.



The solar industry has grown from 15,000 employees in 2005 to more than 119,000 today.[13] They work at more than 6,100 companies, the vast majority being small businesses, in all 50 states. Additional job growth is expected as the industry continues to expand in the future. The ITC has a positive ripple effect to reach beyond project development to enable growth and maturation of the broader solar supply chain – including manufacturers, "mom and pop" retail stores, plumbers, electricians, distributors and salesmen in small towns and large cities across the country. As U.S. manufacturers compete with companies around the globe, the ITC is a critical policy mechanism to ensure robust demand for solar energy components in the U.S. market. The existence of the ITC through 2016 provides market certainty for companies to develop long-term investments in manufacturing capacity that drive competition and technological innovation, which, in turn, lowers costs for consumers.




As discussed above, the significant impact of eliminating MACRS from the tax code would require a corresponding increase in the ITC to continue the current level of federal incentives for private investment in the solar industry. However, the Energy Staff Discussion Draft would not increase the ITC, but instead would change it to 20% in 2017. While 20% is certainly more generous than the permanent 10% ITC that is currently in the Code and set to go into effect in 2017, the combination of eliminating MACRS and reducing the ITC from 30% to 20% would significantly decrease private investors' appetite for solar projects. As discussed above, the Pool 4 cost recovery rate along with a 20% ITC could increase PPA costs on a given project as much as 36% and the LCOE could rise as much as 34-48% depending on the project, even with a 28% corporate tax rate. These costs would likely be passed on to consumers. Higher PPA costs would also make solar less competitive when compared to other energy resources that are competing for utility PPAs.

Furthermore, because solar must compete with technologies that receive a variety of government incentives, changing the ITC to 20% while maintaining current incentive levels for other technologies would disadvantage solar. As the cost of solar property decreases, the cost basis on which the ITC is claimed decreases, thus reducing the cost and the value of the ITC over time.

[13] "National Solar Jobs Census 2012," The Solar Foundation, *available at* http://thesolarfoundation.org/sites/thesolarfoundation.org/files/TSF%20Solar%20Jobs%20Census%202012%20Final.pdf.

**Eliminating the Section 25D Residential Energy Credit Significantly Impedes Residential Solar Installations**

A majority of SEIA's 1,000 member companies are small business installers that sell and install solar energy systems to homeowners. Currently, these homeowners can utilize the Section 25D credit for residential energy efficient property, which allows them to receive a 30% ITC for any qualified solar electric or solar water heating expenditures made in a given year. Under the new 20% ITC, "qualified property" is defined, in part, as property, "with respect to which depreciation (or amortization in lieu of depreciation) is allowable."[14] As residential property is not depreciable, a homeowner who purchases a solar system outright would be unable to claim the proposed ITC.

Eliminating the residential solar ITC would likely discourage homeowners from purchasing solar systems and would decimate the large portion of the solar industry that relies on homeowner purchases as its business model. These small businesses fuel a significant supply chain here in the U.S., which manufactures the panels, inverters, racking, and other hardware that comprise an installed residential solar system, meaning the impact of eliminating this credit would be far-reaching and would hurt small businesses throughout the country. Furthermore, only around 22 states in the U.S. allow third-party solar PV power purchase agreements, and many of these states only allow third-party PPAs in certain jurisdictions.[15] Thus, in states or communities in which third-party PPAs are not allowed, and in the absence of the Section 25D ITC, homeowners interested in installing solar would have to buy a system outright without any federal incentives. While the cost of solar has decreased dramatically, it can still be cost prohibitive for many homeowners to purchase a solar system, especially without any federal incentives. Eliminating the Section 25D Residential Energy Credit and preventing residential customers from using the ITC after 2016 will force many residential users to choose between either purchasing a system outright or forgoing installing solar altogether. It will also force many small installer businesses and the companies that comprise their supply chains out of business.

Finally, individual taxpayers should have the option to choose where their electricity comes from, and how they can save money on their monthly electricity bills. By eliminating the residential ITC, the proposed legislation impedes consumers' ability to choose their electricity source.

**Excluding Solar Heating and Cooling from the ITC Would also Devastate the Industry**

The Energy Staff Discussion Draft would also exclude solar heating and cooling (SHC) property from the ITC. Energy property is currently defined in Section 48 of the Code, in part, as, "equipment which uses solar energy to generate electricity, to heat or cool (or provide hot water for use in) a structure, or to provide solar process heat, excepting property used to generate energy for the purposes of heating a swimming pool." In the proposed Energy Discussion Draft, a "qualified facility" is defined as a facility which is "used for the generation of electricity…"[16] Because solar heating and cooling technologies do not directly generate electricity, but instead avoid the electricity and energy needed to heat and cool a building, this technology would not be able to qualify for the 20% ITC.

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[14] Section 48E(b)(2)(B).
[15] "3rd Party Solar PV Power Purchase Agreements Slide," DSIRE Solar, *available at* http://www.dsireusa.org/documents/summarymaps/3rd_Party_PPA_map.pdf.
[16] Section 45S(e)(3)(A).

The heating and cooling of air and water are essential parts of our everyday lives, supporting our comfort, safety, and productivity. The residential, commercial, and industrial sectors spend over $270 billion annually on heating and cooling, and approximately 44% of energy consumption in the U.S. is directly attributable to heating and cooling.[17] SHC can play a significant role in providing an economically viable and environmentally sustainable long-term solution to these essential daily needs, including domestic water heating, space heating, swimming pool heating, air conditioning, process heating, steam generation, and air heating**.**

Today, more than 30,000 solar heating and cooling systems (SHC) are being installed annually in the United States, generating an estimated $435 million in annual revenue, and employing more than 5,000 Americans across the U.S.[18] SEIA's Solar Heating and Cooling Alliance recently issued a roadmap that shows how America could generate nearly 8% of its total heating and cooling needs through solar, displacing an equivalent of 64 coal plants and creating $100 billion in annual positive economic impacts, including over 50,000 new American jobs, $61 billion in annual energy savings, and $2.1 billion in increased federal tax revenue through job and economic growth.[19] The Energy Staff Discussion Draft would not only jeopardize this effort, but would put this entire industry's future at risk. Without MACRS and the ITC, there will be little to no incentive for home and business owners to use solar heating and cooling, and the Federal Government's encouragement and support for this growing industry over the past few years will have been for naught.

We fully support the Senate Finance Committee Staff's stated goal that one of the fundamental purposes of the tax code changes proposed by the Energy Staff Discussion Draft is to promote the development of cleaner energy made in the U.S. Solar heating and cooling has the potential to displace 226 million tons of carbon emissions annually.[20] Eliminating solar heating and cooling from eligibility for the ITC would seem to work against this fundamental purpose of tax reform.

**Storage**

Under current law and regulations, the IRS has confirmed that batteries used to store solar electricity can qualify for the 30% energy tax credit. SEIA seeks clarification that energy storage devices installed with a solar energy system would continue to qualify for the ITC after the 30% ITC expires in 2016, and under the new 20% ITC as well.

**The Clean Energy Production Credit**

SEIA appreciates that the Senate Finance Committee Staff listened to and addressed the solar industry's concerns by providing in the Energy Discussion Draft for renewable electricity producers with qualifying technologies to choose between a PTC and an ITC. However, as the proposed PTC is currently drafted, the PTC would be calculated based on the applicable credit rate multiplied by the kilowatt hours of electricity either produced by the taxpayer at a qualified facility and sold by the taxpayer to an unrelated person, or for a qualified facility with a metering device, the facility must be "owned and operated by an

[17] "Solar Heating and Cooling: Energy for a Secure Future," SEIA, November 2013, at p. 7, *available at* http://www.seia.org/us-solar-heating-cooling-shc-alliance/solar-heating-cooling-shc-roadmap.
[18] *Id.* at p. 25.
[19] *Id.*
[20] *Id.*

unrelated person, sold, consumed, or stored by the taxpayer during the taxable year."[21] As such, it does not appear that the PTC could be claimed by a system's lessee who is consuming the energy. To allow for solar developers to effectively choose between the PTC and ITC, the PTC should be available for leased systems, which make up a growing portion of solar energy property.

**Conclusion**

As the brief duration of federal solar tax incentives demonstrate, effective federal tax policy can yield significant energy and economic policy benefits. While we recognize the increased certainty that the Energy and Cost Recovery Staff Discussion Drafts would provide for the solar ITC, the combination of replacing MACRS with a depreciation system based on economic lives, setting the commercial ITC at 20 percent, allowing the residential solar ITC to expire, and excluding solar heating and cooling from the revised ITC puts the continued growth of the solar industry in significant jeopardy. As Congress considers tax reform, SEIA and the U.S. solar industry look forward to working constructively with policymakers to craft effective tax policy that is consistent with the nation's energy and economic policy objectives.

Thank you for this opportunity to provide feedback on the Energy and Cost Recovery Staff Discussion Drafts.

Sincerely,

Rhone Resch
President & CEO
Solar Energy Industries Association

[21] Section 45S(a)(1)(B)(ii).