Request for Information: Challenges and Opportunities for the American Solar Industry

DATE: December 7, 2018

SUBJECT: Request for Information (RFI)

**Purpose**

The U.S. Department of Energy Solar Energy Technologies Office (SETO) seeks information to help inform its research priorities, as part of its annual planning process. The purpose of this RFI is to solicit feedback from industry, academia, research laboratories, government agencies, and other stakeholders to identify areas of interest related to challenges and opportunities for the American solar industry that are appropriate for federal government funding. This is solely a request for information and not a Funding Opportunity Announcement (FOA). No funding applications are being accepted in response to this RFI.

**Topic 4: Balance of Systems Soft Cost Reduction**

SETO invites input from the public regarding research priorities on reducing the regulatory and administrative burdens that impose unnecessary red tape on solar businesses and increase the cost of solar energy. This RFI is specifically focused on the soft costs of permitting, inspecting, interconnecting, and financing solar energy systems, as well as behind-the-meter solar energy plus storage systems. In particular, EERE seeks input on research priorities related to 1) reducing soft costs by crossing jurisdictional boundaries, for example through regional efforts, urban-rural collaborations, or innovative public-private partnerships; 2) reducing the regulatory burden of solar permitting, inspection and interconnection; and 3) achieving low-cost residential solar financing.

**Background**

Although the non-hardware costs of a solar system declined by 40% between 2008 and 2016, hardware costs have decreased significantly faster, resulting in a larger share of the total solar system cost now due to soft costs. Permitting and inspection alone can comprise as much as $1/Watt installed of a residential solar system cost. These soft costs create significant burdens for solar businesses, and are due in part to the large number of governing bodies that have a role in the regulation of solar projects. Permitting and inspection requirements and filing processes vary across jurisdictions, of which there are over 18,000 Authorities Having Jurisdiction (AHJs). Similarly, interconnection requirements and filing processes vary across the approximately 3,300 investor owned, co-operative, and municipal utilities. At the same time, new technologies such as behind-the-meter solar plus storage systems are entering the marketplace, adding new challenges to the regulation and financing of solar systems.

Similarly, the cost of capital for solar project development remains a significant element in the cost stack. Many of the financial products for solar heavily rely on credit scores (personal and business) to assess risk. It may be possible to increase the solar energy customer base by developing new financial instruments or means to assess risk that focus on other relevant factors.

SETO has funded a number of programs aimed at reducing permitting, inspecting, interconnecting, and financing solar energy systems. SolSmart ([www.solsmart.org](http://www.solsmart.org)) is a national recognition and technical assistance program for communities that helps reduce local barriers to solar installation including permitting, zoning practices, local workforce issues, etc. To date, over 200 communities have been designated SolSmart Gold, Silver or Bronze. The Solar in Your Community Challenge ([www.solarinyourcommunity.org](http://www.solarinyourcommunity.org)) is a prize challenge to develop innovative and scalable business and financial models that expand solar access. Over 170 teams from 42 states, plus Washington, DC, Puerto Rico and Guam, were selected to participate in the challenge and are competing for $1 million in final prizes. The Solar Market Pathways program ([www.solarmarketpathways.com](http://www.solarmarketpathways.com)) supported 14 projects across the US that focused on reducing regulatory and financing barriers and resulted in dissemination of lessons learned, best practices and analytical tools.

SETO has also funded technical assistance specifically related to permitting for utility-scale solar. Argonne National Laboratory was supported to provide technical assistance to the Multiagency Avian-Solar Collaborative Working Group (CWG), an effort by federal and state agencies to advance the knowledge of avian-solar interactions and to inform future agency actions to reduce the impacts of solar energy development on birds.[[1]](#footnote-2) The CWG published a Multiagency Avian-Solar Science Coordination Plan (<http://blmsolar.anl.gov/program/avian-solar/docs/Final_Avian-Solar_Science_Coordination_Plan.pdf>), which provides a framework for future research needed to support agency decisions regarding utility-scale photovoltaic (PV) and concentrating solar power development. Concurrently, environmental organizations, academics, and the utility-scale PV industry formed the Avian-Solar Working Group (ASWG) to advance independent and coordinated scientific research to better understand how birds interact with solar facilities. The ASWG convened a panel to develop an avian-solar research agenda, the Research Panel Report ([www.aviansolar.org](http://www.aviansolar.org)). The CWG and ASWG met to share research plans and ongoing research at an August 2017 Avian-Solar Technical Symposium.[[2]](#footnote-3) SETO funded work in this space concluded in 2018. SETO is interested in learning more about how the concentrating solar power and photovoltaics industries can be better informed of avian-solar impacts and how they can be mitigated to reduce regulatory burdens.

As more consumers go solar and more companies adopt solar solutions, there is a demonstrated need in the industry to minimize administrative costs related to permitting, inspection, interconnection, and financing.

To streamline the processing of inputs a number of questions are added that cover the subjects presented above. Please respond to as many of the specific questions or topics as may be deemed appropriate.

Categories and Questions

**Category 1**: Crossing Traditional Boundaries to Reduce Soft Costs

1. Would regional collaborations to standardize and harmonize solar permitting, inspection, interconnection, and financing processes be an effective strategy for reducing regulatory burden on solar businesses? Which stakeholders and regional groups would need to be part of such efforts in order to be effective?
2. What other recommendations do you have for research that can cross traditional boundaries to reduce the regulatory burden on installations, for example via innovative public-private partnerships?
3. How can existing solutions and best practices for permitting, inspection, and interconnection processes be more effectively and expeditiously transferred to other jurisdictions? What tools or technical support is necessary for such knowledge transfer?

**Category 2**: Streamlining Solar Permitting, Inspection and Interconnection

1. Are there models that exist for optimal permitting, inspection, and interconnection processes for (a) residential rooftop, (b) commercial, and (c) community solar projects? Please provide as much detail as possible.
2. What remaining challenges for reducing permitting, inspection, and interconnection costs for (a) residential rooftop, (b) commercial, and (c) community solar projects can best be addressed by federal government funding for technical assistance, stakeholder convening, training programs, and/or the development of new online tools for streamlining these processes?
3. As new solar plus other distributed energy resource systems (e.g. behind-the-meter storage, electric vehicle charging) are deployed, what new permitting, inspection, and interconnection challenges are emerging? What novel approaches could apply lessons learned from solar-only permitting, inspection and interconnection?
4. What are the unique permitting, inspection, and interconnection challenges faced by cooperatives and municipal utilities? How could federally funded research, analysis or technical assistance funding appropriately help?
5. In the area of environmental permitting, what are the highest priority research areas that would best contribute to the knowledge base on the type and magnitude of avian impacts at utility-scale PV and/or concentrating solar power facilities? How could improved transparency, data collection methodology, and/or sharing of avian-solar data better inform deployment initiatives?

**Category 3**: Achieving Low-Cost Residential Solar Financing

1. What gaps exist in the local financial institution market (e.g. community banks, credit unions, and Community Development Financial Institutions) that constrain investing in solar assets within their communities? What tools or resources do those local financial institutions need in order to successfully enter the solar market?
2. What metrics or methods have been developed, in addition to traditional credit scores, to help enable access to solar for a larger number of Americans? Are there examples where innovative underwriting methodologies have been used to facilitate lending? How do these metrics or methods vary from those used by traditional local lenders to could determine repayment risk?
3. Are there examples of the successful integration of energy assistance programs and solar project finance in lower income communities? If so, are they being widely applied and what inhibits these innovations from being extended to other communities? Who are the appropriate stakeholders and what methods could be applied to driving innovation?
4. What tools could enable local financial institutions to leverage incentives (e.g., Community Reinvestment Act, Low Income Housing Tax Credit), especially for projects that expand access to lower income communities (individuals and businesses)?

**Request for Information Response Guidelines**

To respond to **Topic 4: Reducing Regulatory and Administrative Burden for Solar Businesses**, please email your response to [SETO.RFI.BOS@ee.doe.gov](mailto:SETO.RFI.BOS@ee.doe.gov) no later than 12:00pm (ET) on January 7, 2019. Responses to this RFI must be submitted electronically and provided as attachments to an email. It is recommended that attachments with file sizes exceeding 25MB be compressed (i.e., zipped) to ensure message delivery. Responses must be provided as a Microsoft Word (.docx) attachment to the email and have 12 point font and 1 inch margins. Only electronic responses will be accepted.

Please identify answers by responding to a specific question or topic if applicable. Respondents may answer as many or as few questions as desired at their discretion.

EERE will not respond to individual submissions or publicly publish a compendium of responses. A response to this RFI will not be viewed as a binding commitment to develop or pursue the project or ideas discussed.  
  
Respondents are requested to provide the following information at the start of their response to this RFI:

* Company / institution name;
* Company / institution contact;
* Contact's address, phone number, and e-mail address.

1. Agencies participating in the CWG include DOE, the Fish and Wildlife Service, US Geological Survey, Department of Defense and state energy and wildlife agencies from Arizona, California and Nevada. [↑](#footnote-ref-2)
2. Materials from the CWG and ASWG joint meetings are available at <http://blmsolar.anl.gov/program/avian-solar/>. [↑](#footnote-ref-3)