

# **Solar Energy Evolution and Diffusion Study (SEEDS) II State Energy Strategies (SES)**

## **District of Columbia Strategy for bringing the benefits of Solar to Low and Moderate Income Communities.**

### **Executive Summary**

The District of Columbia is using a multi-pronged approach to address market challenges for deploying more solar photovoltaic (PV) capacity and sharing the benefits with low and moderate income communities. The following plan, developed through the multi-state grant led by Clean Energy State Alliance, funded by the U.S. Department of Energy is leveraging our grant partners, technical assistance and funding to develop and implement strategies designed to create pathways for accessing real estate, identifying target households and delivering programs that will provide education and engagement for our stakeholders. This plan is viewed as a starting point to providing solutions for a complex evolving market with great growth potential. We look forward to sharing lessons learned and providing some pathways for other communities to utilize.

### **Background**

The Renewable Portfolio Standard Expansion Act of 2016 (the Act) was a further step forward in expanding access to the benefits of solar. Among other things, the Act established the Solar for All program. The Act intends to expand DC's solar capacity, to increase the amount of solar generated within the District, and to provide the benefits of locally generated solar energy to low-income households, small businesses, nonprofits, and seniors. Funded by the Renewable Energy Development Fund (REDF) and administered by DOEE, Solar for All's specific targets are to

- provide the benefits of solar electricity to 100,000 low-income households (at or below 80% Area Median Income), and
- reduce their energy bills by 50% (based on the 2016 residential rate class average) by 2032.

Through a competitive process, Solar for All awards grants for proposals to establish solar projects in the district. The District awarded \$13 million in competitive innovation grants for the first phase of implementation of Solar For All.<sup>1</sup> These grants are funding small pilot projects, including a project that will fund low-income residents to participate in a solar bulk-purchase program run by Solar United Neighbors, and another project through which GRID Alternatives offers solar job training as it installs panels on the homes of low-income residents. Projects that are successful can be replicated in the future, and this early phase of relatively small pilot projects is intended to lead to larger-scale projects in coming years. This initial research and innovation phase of Solar For All, will result in development of an estimated 20 to 40 MW of solar capacity by end of calendar year 2019.

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<sup>1</sup> District Department of Energy and Environment "Solar For All" web site. <https://doee.dc.gov/node/1226501>

Through working group and stakeholder feedback received we have identified the following challenges in District's low income solar market (LMI): (1) limited availability of roof top and real estate, (2) split incentives for LMI renters, and (3) availability of financing options for LMI solar projects.

First, the District is densely populated and has limited open space, making it difficult to access real estate for solar installations. Currently, obtaining site access for commercial or multifamily buildings is a lengthy, costly and challenging process for developers. In addition, there are challenges installing roof top solar due to roof condition, competing priorities for roof space and other revenue generating options.

Next, the challenge of split incentives and short tenancy limit the increased deployment of solar along with longer payback periods. The lessons learned through our initial phase of projects are expected to deliver some innovative benefit sharing options that will allow more low to moderate income households to reduce their energy cost burden through the benefits of solar.

Lastly, in the District there are perceived risk of investing in solar technology for low income projects such as creditworthiness and default from offtakers. In addition, there are challenges in providing streamlined and consistent funding eligibility criteria for LMI solar project. These factors increase the probability of investor loss of interest in funding projects. The District will utilize lessons learned to educate stakeholders with the intent to encourage private capital investment in the development of innovative low income solar financial products.

## **Objectives**

In order to meet the requirements of the Act and of the Solar for All program, the District Department of Energy and Environment (DOEE) is leveraging existing Renewable Energy Development funding (REDF), public private partnerships, and peer-to-peer exchange and technical assistance/research provided through the multi-state SEEDS II SES grant, led by the Clean Energy States Alliance (CESA). DOEE will focus efforts of this U.S. Department of Energy funded initiative on several specific strategies that will contribute to the larger Solar for All program goals. These include:

- Developing a pilot 2.5 MW low-income community solar project on a brownfield.
- Promoting low-income solar for affordable housing through workshops for affordable housing organizations.
- Developing educational materials about solar for low-income District residents.
- Working with a team from NREL to map energy burden for low income households in the District.
- Working with a contractor to survey low-income District residents about their interest in solar.

These strategies are described below.

## **Strategy 1**

**Title:** Community Solar Pilot Project

**Description:** The District intends to develop up to 2.5 MW Community Renewable Energy Facility on a government-owned brownfield. The project will provide solar subscriptions resulting in up to 50% energy cost reduction for participating households. All participating households will be participants in LIHEAP and WAP. This is a major project with a high degree of complexity that requires strong collaboration with local utility, government agencies, community and private sector organizations. This pilot project that is intended to provide experience and lessons that can be applied to similar projects in the future.

**Target:** Provide at least 50% cost savings for up to 600 low-income households

**Work plan:** This project is well underway. A site has been identified, and an environmental review of the site will be completed in the next couple of months. LIHEAP clients in the neighborhood have been identified as potential customers. A procurement process to hire an installer has been completed. DOEE plans to begin outreach and engagement to potential customers in the spring of 2018.

### **Timeline: (Tentative)**

- Begin construction – Fall 2018
- Begin outreach to potential customers - Spring 2018
- Construction complete – Spring 2019
- Interconnection and begin operation – Spring/Summer 2019

### **Financial resources, including salaries and other administrative/planning costs:**

- DOEE REDF Estimated \$5,000,000
- CESA grant pays for staff time for DOEE staff to engage in task force meetings, community engagement and development meetings while REDF funds will pay for construction and operation.

**Personnel resources:** 5-10 Project team members (DOEE staff, Department of General Services (DGS), Pepco, Advisory Neighborhood Council, Department of Consumer and Regulatory Affairs (permitting) plus contracted developer team

## **Strategy 2**

**Title:** Education Collaboration for Solar in Affordable Housing

**Description:** Promote the integration of scalable solar project models for low-income solar into affordable housing planning by collaborating with local organizations to provide two workshops for affordable housing organizations on low-income solar.

**Target:** Facilitate the installation of 7 MW of solar to benefit up to 2000 affordable housing tenants.

**Work plan:** Develop budget, meet to identify barriers and opportunities to low income solar for affordable housing organizations, engage stakeholders, develop workshop materials, feedback and input, finalize materials and deliver workshops

**Timeline:**

- Begin coordination with MWCOG planning dates – Fall 2018
- Coordination with workshop task force to develop materials, select dates, location for workshop (discuss goals, topics, materials and expected outcomes) – Fall/Winter 2018
- Finalize materials, agenda and presenters – Winter/Spring 2018
- Deliver workshop Spring/Summer 2019

**Financial resources:** estimated \$20,000 CESA grant will pay for the staff time prepare for, organize and moderate workshops, food, venue cost and printing of materials.

**Personnel resources:** 3-5 working group members DOEE staff, stakeholders and OPC

**Strategy 3**

**Title:** Solar Resource Mapping

**Description:** The goal of our low income solar programs is to provide a 50% electricity bill reduction for households that meet 80% AMI based on Department of Housing and Urban Development definition or financial equivalent. Collaborate with NREL and the University of Michigan to use their mapping tools to solar resources (rooftop and otherwise) in the District. This strategy is intended to enable the development of future solar projects.

**Target (quantitative):** This project is underway. Coordinating with data working group partners (Pepco, DHCD, DOEE and OCTO). Research being conducted to map buildings and energy burden and expand solar feasibility maps. Current low-income technical potential assessments do not consider building structural suitability, electrical code issues, or roof structural assessment and their impact on solar deployment goals. Research will focus on assessment of building physical characteristics, identifying areas more suitable for community solar and identifying areas requiring physical infrastructure assistance.

**Work plan:** Develop budget, meet with data working group, research, review, provide feedback, draft report and other educational materials incorporating GIS platform.

**Timeline:**

- Coordination with DOEE, U of Michigan and NREL – Summer 2018
- Coordination with Data working group (discuss goals, MOU's, Non-Disclosure agreements, availability of date, and expected outcomes) – Summer/Fall 2018
- Share results with CESA and partnering states for feedback - Fall 2018

**Financial Resources, including salaries and other administrative/planning costs:**

Estimate \$20,000 CESA grant will cover marketing materials, reports and DOEE staff time. Developing any contractual arrangements or non-disclosure agreements as required.

**Personnel Resources:** 3-5 working group members DOEE staff and stakeholders

**Strategy 4**

**Title:** Develop educational materials on solar for low-income District residents

**Description:** Develop educational materials that will assist low-income District residents to be informed consumers of solar. These educational materials could be used broadly for future low-income solar projects in the District. The materials will be produced by researching existing educational materials on solar for low-income people and learning about the perceptions of solar by low-income District residents, and through a process of experimentation, feedback, and revision.

**Target (quantitative):** This project is planned for Summer/Fall 2018. Coordinating with data working group partners (Pepco, DHCD, DOEE and OCTO). Provide educational materials on 3 low to moderate income consumer education topics identified from feedback and input from market analysis.

**Work plan:** Develop budget, review goal of materials, select 3 specific topics, collaborate with working group and develop materials for stakeholders in collaboration with OPC and other consumer focused organizations.

**Timeline: (Tentative)**

- Coordination with Working Group, DOEE, OPC, Stakeholders identify information need, expected outcomes and media platform of materials – Summer/Fall 2018
- Share results with CESA and partnering states for feedback - Fall 2018
- Disseminate materials Fall/Winter 2018

**Financial resources, including salaries and other administrative/planning costs:**

- CESA \$10,000
- CESA grant pays for staff time for DOEE staff to engage in task force meetings, community engagement and printing of materials.

**Personnel resources:** 3-5 Project team members (DOEE staff, Working Group, Pepco, Office of People’s Counsel, Department of Consumer and Regulatory Affairs (permitting), stakeholders

**Strategy 5**

**Title:** Survey of low-income District residents

**Description:** Work with a contractor to survey low-income District residents on their perceptions of solar. This information could be used to help design future projects and develop more finely targeted educational materials.

**Target (quantitative):** This project will engage 150 residents in the District of Columbia regarding solar adoption in communities with households at or below the 80% Area Median Income based on the Housing and Urban Development definition.

**Work plan:**

Develop budget, review goal of materials, select 3 specific topics, collaborate with working group and develop materials for stakeholders in collaboration with OPC and other consumer focused organizations.

**Timeline:**

- Coordination with Contractor, Working Group, DOEE, OPC, Stakeholders identify information need, expected outcomes and survey questions – Summer/Fall 2018
- Share results with CESA and partnering states for feedback - Fall 2018
- Disseminate materials Fall/Winter 2018

**Financial resources, including salaries and other administrative/planning costs:**

- CESA \$25,000
- CESA grant pays for staff time for DOEE staff to engage in task force meetings, community engagement and contractor services web portal updates, training, interviews, reports and other printed materials.

**Personnel resources:** 3-5 Project team members (DOEE staff, Contractor, Working Group, Office of People's Counsel and stakeholders)