A plan to boost low-income solar options

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The eight-page whitepaper represents the consensus views of 70 stakeholders that participated in an April roundtable on deploying solar to benefit low-income D.C. residents.

Expanding solar energy to low-income homes could provide an economic boost to less affluent District families, according to a group of city stakeholders, including the GW Solar Institute and DC Solar United Neighborhoods.

The two organizations sent a whitepaper to Mayor Vincent Gray, B.S. '64, members of the D.C. Council and the District Department of the Environment (DDOE) last week on how to accelerate the deployment of solar energy. Among the potential outcomes are steps that could address

energy affordability and generate wealth within low-income communities.

"Solar is booming, but it's primarily affluent neighborhoods and rooftops that are taking advantage of it," said Amit Ronen, director of the GW Solar Institute. "Some industries are looking at where we can go next on the residential side. We're also looking for what's good for society. Why can't low-income people have the benefits of solar?"

Property ownership and older buildings are two current answers to that question. Lower-income D.C. residents are more likely to be renters, live in multifamily buildings or have inadequate roofs for solar installation. More than 75 percent of the city's multifamily units were built before 1970, which means they can use up to 30 percent more energy per square foot than homes built after 1990, according to a series of reports compiled by Dan Moring, a graduate student in the College of Professional Studies' Sustainable Urban Planning program.

Mr. Moring has been working with Mr. Ronen and Ekundayo Shittu, assistant professor in the School of Engineering and Applied Science, on analyzing the spatial component and energy demand of city housing. Because new buildings replace old ones at a very slow rate, the faster way to address energy issues in cities must be directed at retrofitting existing buildings, he said. That comes with another set of hurdles.

"The physical and legal control of structures is a barrier," Mr. Moring said. "Even if residents have an incentive to help them afford installation they don't necessarily have the ability, as a tenant, to throw a solar panel on the roof and hook it up themselves."

The eight-page whitepaper, which represents the consensus views of 70 stakeholders that participated in an April roundtable on deploying solar to benefit low-income D.C. residents, recommends the creation of a

private-sector administered loan guarantee for low-income households and a rebate program to help cover up-front installation costs. It also calls for ownership sharing of community solar projects, as outlined in the 2013 Community Renewables Energy Act, which could help address the issue Mr. Moring brought up regarding roof structure and ownership.

"Say you are a renter, you don't own your own building; there could be a solar array built on another building, and you could own a portion of it," Mr. Ronen said. "The low-income renter would receive annual dividends—basically the value of the electricity—every year for the life of that system as a credit on their utility bill. Harnessing community solar could have some cool, innovative expansion methods."

Funding for this plan could come in the form of reinvesting payments made by energy suppliers unable to fulfill their solar energy requirements. Under the city's Renewable Portfolio Standard energy suppliers must obtain a certain percentage of D.C.-based solar energy each year. Alternative Compliance Payments—fines if those requirements are not met—are transferred to DDOE to be used to stimulate solar development in the District. A hypothetical $4 million government investment, as outlined in the whitepaper, would help finance around $36 million in private sector loans.

"The returns of solar are pretty clear to those of us who study it every day— you're guaranteed to get your money back within a few years," Mr. Ronen said. "Still, it's a new loaning area for banks, and one of the areas the government could help is to mitigate their perceived risk."

Mr. Moring, who began working on this project as a paper for a course, has since turned it into the topic for his urban planning capstone project. A key aspect of GW's sustainability efforts, the Solar Institute integrates interdisciplinary education, research and outreach in sustainability-related topics. Mr. Moring and several other students working on

community issues regarding energy and with the Department of Housing and Urban Development are expected to present findings at a GW Solar Institute symposium in September.

"There's a lot of policy and social welfare issues and a slew of programs wrapped up in this topic," Mr. Moring said. "Trying to pick them apart and find ways to creatively and effectively align them to the same goals is a challenging but great opportunity for interdisciplinary research."

Provided by George Washington University

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