Could the Arrival of Exelon Dim the Future of Solar in DC?

ALISON GILLESPIE (/ALISON-GILLESPIE)

OVERVIEW

Washington, DC is innovator in urban solar and the city has been working to bring PV panels to low-income homes. But a possible utility merger might throw shade on this city's attempts to harness the sun's energy.

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Very few corporations bring up as much ill will as Pepco, the power company that supplies electricity to much of the Washington, DC metropolitan area. In 2011, the website BusinessInsider even ranked the utility as the "most hated company in America" after reader surveys unleashed a tsunami of complaints about unreliable service, poor customer relations and slow response to storm events. People just generally hated the company, and were happy to say so whenever and wherever possible.

So when news of a possible merger or buy out between Pepco and another energy giant, Exelon, began to emerge last year, solar energy advocates in the nation's capital found themselves in an odd situation.

"Our first email blast for our campaign was titled: 'Worse Than Pepco'," says Anya Schoolman of DC Solar United Neighborhoods (DCSUN). (http://www.dcsun.org/)

Suddenly, Schoolman and others who wanted more solar in their city felt they had to convince their neighbors to like, or at least accept, Pepco — despite its tarnished history. Pepco might not always have been the most reliable, she tells people. But at least they were willing to negotiate and build workable solutions for alternative energy sources.

Exelon, she fears, won't negotiate, and the continued growth of solar in her city may be in jeopardy.

To understand Schoolman's perspective one has to understand a bit of background regarding the feasibility of using solar panels in cities.

A Bright Idea for Shaded City Locations

Throughout most of their time in the consumer market during the second half of the twentieth century, the high cost of the solar panels meant that you either had to have an enormous parcel of open space for capturing a large amount of sun in a short period of time, or you had to be able to pay for the high cost for panels and know that you would not likely see a return on your purchase for a long period of time.

But in the last seven years the price of solar panels has dropped by more than 80%, making the notion of going solar in small spaces more appealing and feasible. Those who install panels – including homeowners, landlords, commercial building owners and cities looking to improve their municipal facilities – are now able to see a much quicker return on their investment. Even small rooftops can provide opportunity for those interested in the potential of this energy source.

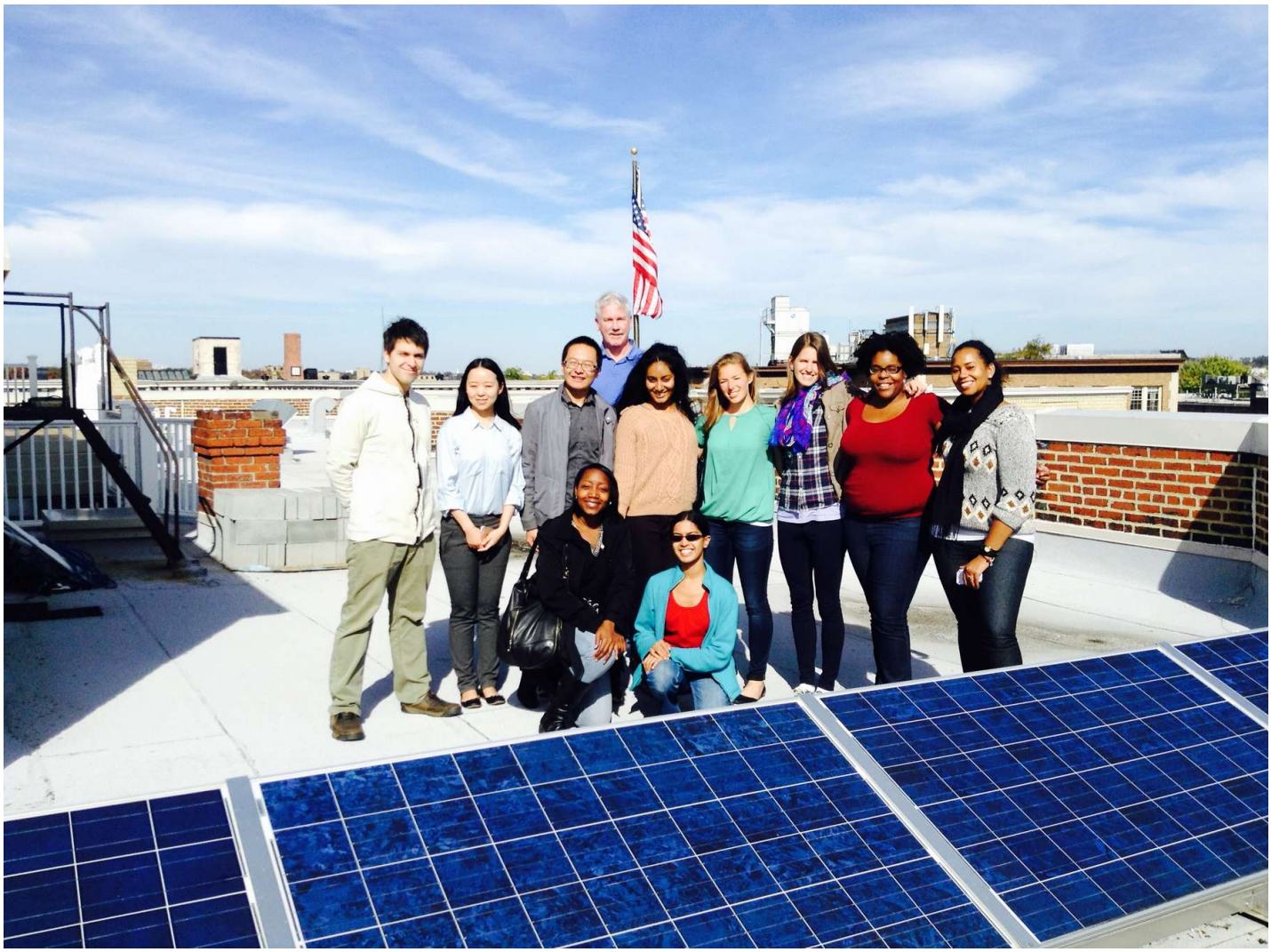
At the same time, digital technology has changed the way that solar power is measured and used. Utility customers with solar sell the excess power generated at the peak of the day back to the local power company through a process known as net-metering. At night or during cloudy days, these same net-metering customers use the regular energy grid, like anyone else. But when they are generating power through their panels, they are either saving themselves money or getting credit on their bills for offsetting demand on an already-stressed power grid.

As a result of these two market forces, DC has been slowly but steadily increasing its solar profile.

Finding ways to capture sunlight turns out to be as challenging here as it is in any other densely-populated, built-up city. While it is true that this is not a city full of skyscrapers — a law dating to 1899 has limited DC's structures to only 130 feet in height – there is not much open real estate downtown. Rooftops are often crowded with HVAC systems, satellite dishes and other needed modern hardware. Parking lots are mostly housed underground, and most of the commercially-owned structures that dominate the city are built to maximize office footage. The type of flat, unshaded surfaces ideal for large photovoltaic arrays remain hard to find in most of the urban core.

But at the same time, residents are also anxious to decrease their bills through what is a very clean energy source. This is a solar-friendly town. So when the prices began to put solar power within reach for modest budgets, Schoolman was one of the first to begin thinking of creative ways to make it work, even atop small, single-family, urban homes.

Her idea was simple: residents could come together, educate themselves about solar options and financing, and make bulk purchases in order to fund



Wayne Gleason (standing at the back) leading a tour of the panels he installed on top of the Argyle Apartment Building at the corner of Park and Mt. Pleasant Streets in DC. Photo by Grant Klein

neighborhood-wide photovoltaic installations on their own roofs. Beginning with the first group Schoolman formed in her own Mt. Pleasant neighborhood in 2007, DCSUN has helped start solar co-ops in all eight of the city's voting districts, known as Wards.

Exelon, critics contend, will not serve DC well and may block the progress of such solar projects across the city.

"The District of Columbia has ambitious renewable energy goals, yet Exelon has a track record of opposition to renewable energy policy. Nowhere in its testimony for its acquisition proposal has the company shown support for the district's renewable energy

goals," stated the authors of a paper published by the Institute for Energy Economics and Financial Analysis entitled "Corporate Strategy at Taxpayer Expense." (http://ieefa.org/exelons-acquisition-of-pepco-at-ratepayer-expense/)

The company's heavy investments in nuclear energy are cited by many as the reason Exelon would likely oppose solar investments in DC; nuclear, unlike natural gas, offers almost no flexibility in how it produces power, meaning it does not mesh well with renewables that come on and off line throughout the day.

Schoolman says she wants DC to max out its potential for solar because doing so might improve air quality, and reduce the city's carbon footprint. But there are also economic issues at stake. Currently, the city does not produce any of its own

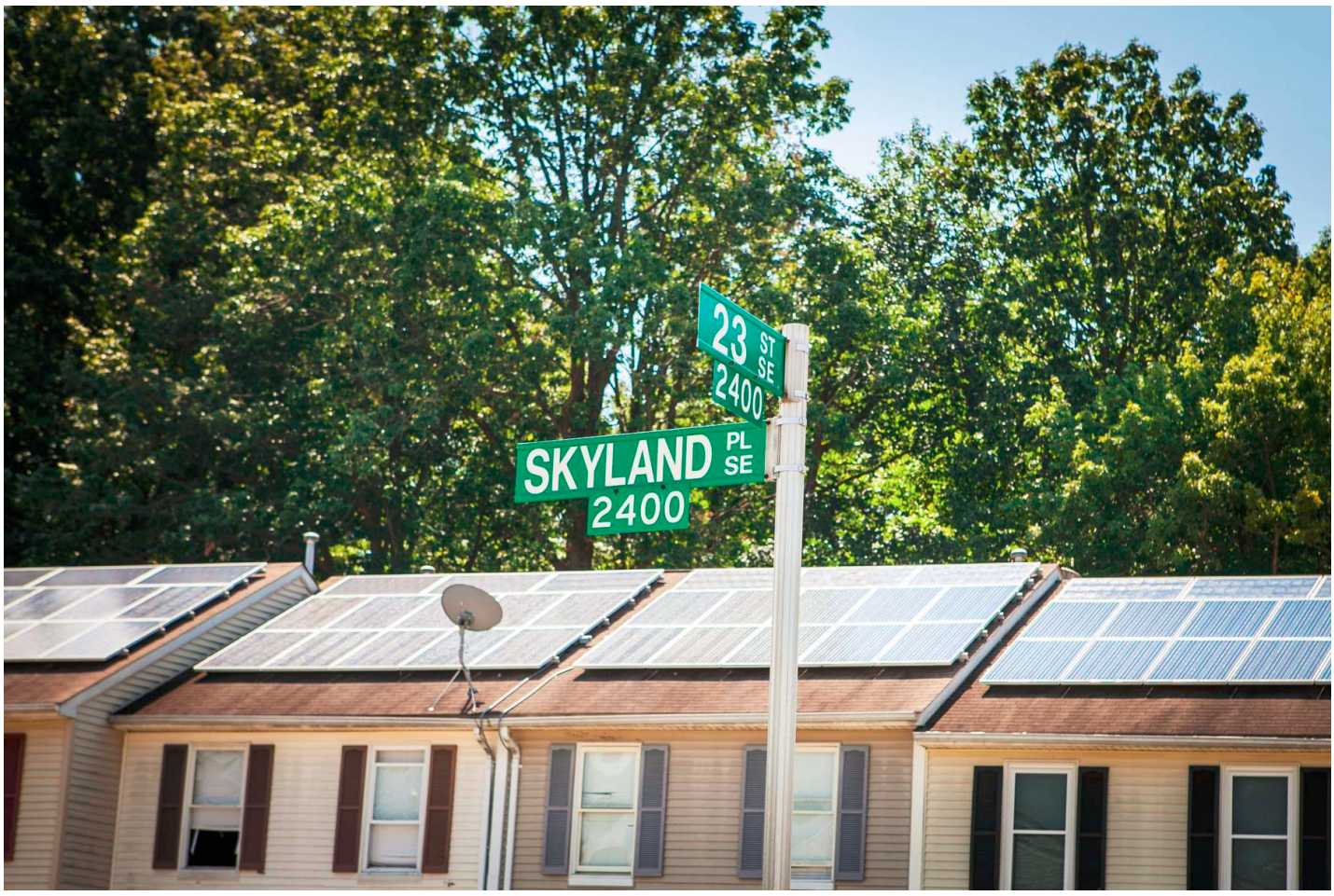


Photo courtesy of DCSEU

power, which many people would like to see changed. "Rather than exporting the money out of the economy, we want an increasing percentage of our energy produced in our city, and creating local jobs."

Something New For Cities Under the Sun

The story of DCSUN's efforts to block the possible arrival of Exelon illustrates an interesting point about the changing nature of renewable energy production in the US. You might expect high use of solar in desert states, or other sunny, flat locations with lots of wide open space. But solar power is also thriving in crowded, sometimes shade-filled urban places.

In 2010 and again in 2012, DC was identified as #1 for solar density in the US by some industry measurements, perhaps proving that the mindset of a city is sometimes as important as its physical infrastructure and environmental limitations when it comes to harnessing the sun.

Surprisingly, this attitudinal shift is not being caused by what some dismissively call the 'Prius effect'; it isn't just the more affluent middle class looking for green

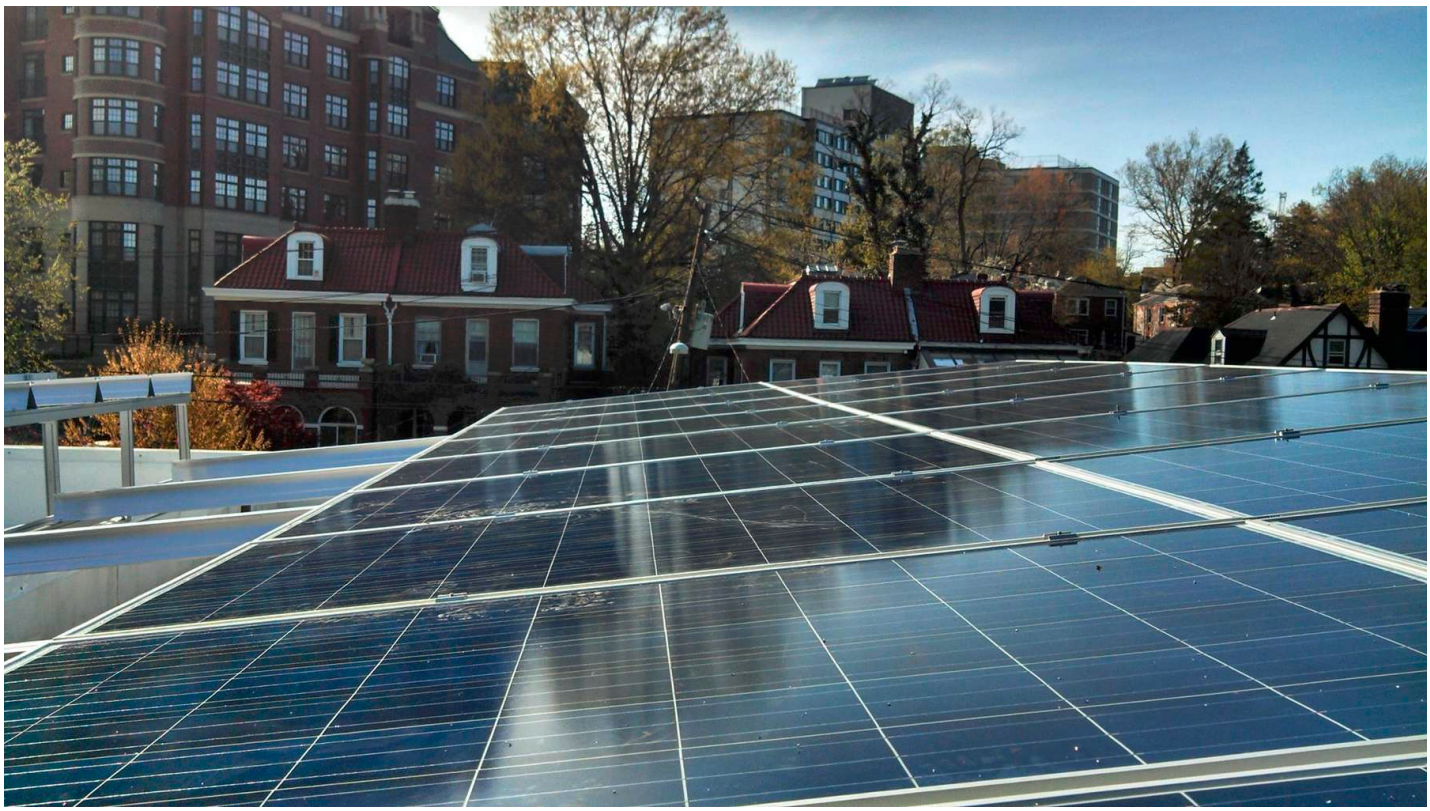


Photo courtesy of Anya Schoolman/DCSUN.

status symbols to put on their roofs. Many throughout cities like DC are pushing to bring some equity to solar installations by working to put PV panels in places they have rarely been used before: in poorer neighborhoods where the return on investment might include reduced greenhouse gas emissions, improved air quality, a reduced rate of peak energy demand on a stressed grid, lower bills and perhaps even a few new green jobs.

In DC, that meant taking solar east of the Anacostia River, to wards 7 and 8, where many of the city's poorest residents live.

Taking Solar to Low Income Neighborhoods

Sometime in the next few weeks when the cold weather breaks and spring arrives, about 130 low income families in DC will have solar panels installed on their roofs at no cost through a new initiative called Solar Advantage Plus.

The program is being funded jointly by the District Department of the Environment (DDOE) and the District of Columbia Sustainable Energy Utility (DCSEU). DCSEU was established in 2008 by the DC Council through legislation called the Clean and Affordable Energy Act, and designed to increase participation the city's renewable energy market and reduce overall energy usage.

One of the first programs run by DCSEU helped to install panels on 87 rooftops in Wards 7 and 8 in 2012. The numbers sound small. But prior to that time, less than a dozen buildings east of the Anacostia in DC had solar panels.

"Without this kind of program," says George Nichols, DCSEU Manager of Policy and Public Affairs, "people in those neighborhoods would never get to take advantage of this technology and all of its benefits."

When solar panels went up on houses in those neighborhoods, local residents became interested in learning more about solar technology, and some who weren't qualified for the program even paid to have solar installed.

“Not only did we want to touch the market for low income,” says Nichols. “We also wanted to touch the capacity of our local contractors.” DCSEU hired local companies who emphasized community building, word-of-mouth marketing, the employment of neighborhood jobseekers, and customer education in their proposals.

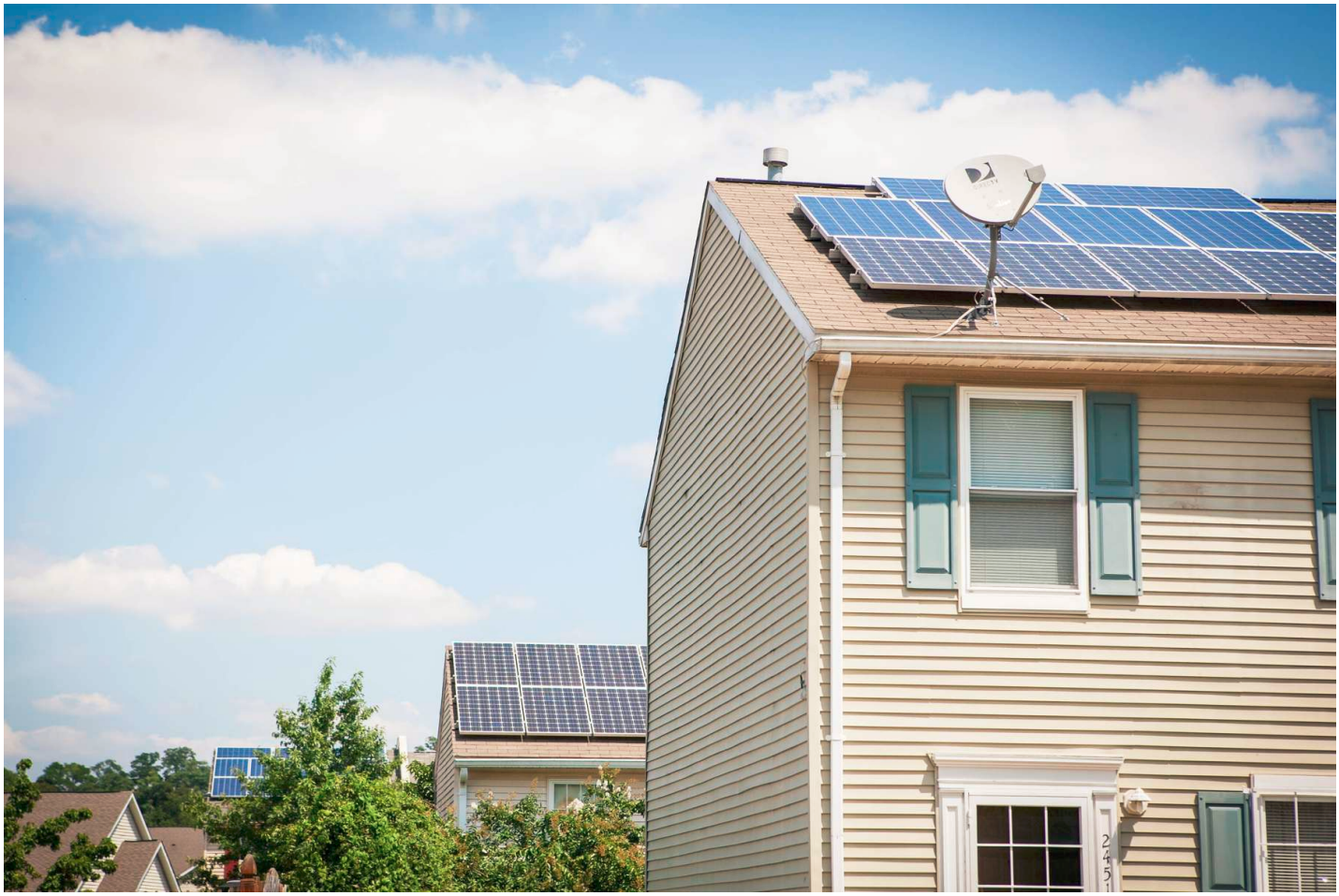


Photo courtesy of DCSEU

There are important economic reasons for municipalities to make these investments. State and federal agencies and city governments like the District currently spend billions of dollars each year on energy assistance programs for low-income households. Keeping a city like DC livable for the working poor can be a challenge when the basic cost of living keeps rising.

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According to a report by 2015 George Washington University's Solar Institute, electricity costs account for 5.7% of a median low-income family's budget; by contrast, they account for only 1.9% of the budget of other families. Partly, experts say, this is because low-income residents often rent and live in homes that have not been insulated or built with higher quality or more energy efficient materials. Financing the solar panel investment can also be a barrier to solar for many families; less affluent households often have a smaller amount in savings, a lower income to borrow against and lower credit scores.

Solar Advantage Plus, the new DCSEU/DDOE program, will provide solar installers rebates of $2.50 per watt up to a maximum of $10,000 for working with pre-approved low-income households. Some of those receiving panels may be earning as little as $31,000 per year; rebate money will be provided on a first-come, first-served basis.

Wells says solar energy is just one of many tools needed to take his the city's power grid into the future. DC and many other cities will soon generate more of their own electricity from many different sources, and harness and manage it in what he calls "a very holistic and comprehensive way."

He's interested in solar's potential, but also intensely interested in other efficient energy innovations, like cogeneration using natural gas and heat in so called "cogen" plants. Cogen may have a larger future in DC than solar, he thinks, because about 80% of the energy used in his city is consumed by commercial buildings that have little logistical chance of ever getting PV panels due to limited roof space. To his mind, diversifying energy goes beyond simply putting in more solar.

He points out that many local low-income homes need to be weatherized. Currently, improving low income housing is viewed as a social service project.

“Weatherization of homes is managing energy,” he says. “It also goes with: do we also want to put a solar panel on the roof? Do we want to change how the water is heated with solar? Is there a possibility of geothermal? Or geothermal between shared between two small multifamily buildings?”

Beyond single family homes, several local and federal agencies have also been installing solar panels on affordable housing complexes in the city.

In 2011 Columbia Heights Village, a 406-unit 31-building affordable housing complex on 14th Street NW, was renovated and retrofitted with energy upgrades, including one of the largest arrays of solar panels in the city. The 20-kilowatt

Columbia Heights Village has one of the largest solar panel installations in the city. Photo courtesy of the Clark Energy Group

system built and designed by Clark Energy Group was funded through grants from the DDOE and the U.S. Treasury Department, and was touted as positioning Columbia Heights Village on the cutting edge of Housing and Urban Development’s affordable housing stock.

Like a small number of other similar projects in DC, the installation was coupled with educational programs which encouraged residents to reduce their water and energy consumption. The Clark Energy Group says that as a result of those "engagement measures," savings from the project ended up being much higher than projected. The panels now produce an estimated 25 MWh of electricity each year, which meets about 5% of the development's common area needs.

When you work to put solar on a single family home, says Thomas Lee, you can potentially create enough electricity to cover all of your energy costs for a single year. But affordable housing units in cities tend to be mid-rise, multifamily buildings. Solar there may not have the same kind of financial benefit for residents.

Lee is a LEED-certified Program Director for the Enterprise Community Partners, a charitable organization founded by Jim Rouse, the developer of Columbia, MD and Faneuil Hall in Boston back in the 1970s. Enterprise offers a range of financial products, programs, and technical assistance geared toward increasing the supply of affordable housing across the US. He works on neighborhood-scale initiatives to develop large "green infrastructure" projects.

"We can still install solar in multifamily buildings," Lee says. "But we aren't going to be able to cover the cost of everyone's electric bill at that site. Maybe we can cover a portion of the bill, or we may be able to pay off the cost of the common area where electricity is needed to run the fan for ventilation, or perhaps the HVAC. But in doing that we can cut a significant portion off the operating costs for owners. Hopefully that savings translates to lower rents for the families that live there."

There's an increasing need, he notes, to make urban areas and public housing energy resilient as well as energy efficient if people are going to be truly secure.

Ideally, homes should be built where the chances of flooding or other problems are low. But in the event that a natural disaster does strike, it would be best if buildings could continue to operate, even if the grid goes down. The diffusion of power production would

mean that cities would not necessarily have to rely on one source of energy at those times. “The thinking is that by having more solar capacity out there in our cities, we would not just be relying on one generator or power plant.”

The current configuration of solar panels means that if the larger grid goes down, the panels must stop operating, too. Right now, the hardware costs are too high for widespread use of back-up batteries that could store excess power for emergency use from net-metering systems. But there’s a push, he says, to develop the technology and bring the costs down.

“Net-metering is a step in the right direction towards resiliency, a big step in creating the infrastructure.”

When asked how DC compares to other cities when it comes to solar, he notes that policies can be as important as the physical environment. “There are lots of areas with lots of space where it’s extremely sunny. But they don’t all adopt policies that make solar appealing. If you could adopt some of the same policies in some of the southwest states that you have in DC you can be assured that everyone would be getting solar.”

Will the Merger Throw Shade on the City?

When asked about the proposed utility merger and its possible impact in DC, Wells from DDOE pulls back to look at the bigger picture. His bottom line is that whatever the source of power used by the city, the supplier has to be reliable and has to address the needs of the big commercial buildings if DC is going to reach its energy goals.

“There’s the common value that we want people to have unfettered access to solar on their homes,” he says. “We really believe in that.” Exelon, he says, seems to have a track record of not supporting homeowner solar net-metering as well as they could.

A climate action plan developed by former Mayor Vincent Gray boldly proposed to increase the use of renewable energy in the city by 50% by 2032. Wells points out, however, that even with a huge push towards solar installations, the city is only

committed to producing 2.5% of its energy through solar power by 2023, so it may be best to carefully negotiate a very diverse energy future no matter which company ultimately supplies and manages the power.

But Schoolman from DCSUN thinks that continuing to change policies in the city could push the percentage of solar much, much higher. She envisions a time when the rooftops of lots of neighborhoods will look more like her own: with a solar panel in every direction almost as far as the eye can see. She thinks that it is not unrealistic to have as much as one third of the city's power coming from solar.

Some nationwide statistics seem to back her up on that vision. The Solar Energy Industries Association, for example, noted that the third quarter of 2014 was the largest quarter ever for PV installations, bringing the nation's cumulative solar PV capacity to 16.1 gigawatts, due in part to net-metering and solar tax credit programs. Other reports have forecasted even larger growth for the coming years.

Schoolman points to the not-yet-implemented Community Renewables Energy Act of 2013, which would make solar power an option to all residents, no matter if they live in a sunny or shady location, own a single family home or rent a basement apartment.

CREA, which was passed unanimously by the DC Council, created what Schoolman affectionately calls "solar gardens." By investing in a solar garden through CREA, a resident anywhere in the city can then get credited on their own bill for the energy produced at their investment site.

Advocates for solar holding up sunflowers at a hearing in

But the future of CREA was cast into doubt with the announcement of the possible merger.

DC. Photo courtesy of Anya Schoolman/DCSUN.

Reflecting back on it now Schoolman notes, “Even though Pepco wasn’t crazy about that legislation, they worked with us on it. They actually were part of the technical working group and they negotiated on it in good faith. Exelon has absolute principles – their corporate principles – against supporting that kind of legislation.”

Awaiting Word from the Public Service Commission

The list of opponents to the power company merger in DC continues to grow, (http://www.powerdc.org/declaration.html) and now includes more than 25 area organizations working on both environmental and fair housing issues in the city. Several observers have raised concerns that Exelon has yet to commit to improving reliability within the grid, which is often vulnerable during large storms in both summer and winter.

Representatives from Exelon have refuted statements by Schoolman and her fellow activists, pointing repeatedly to investments the company has made in solar power in the Midwest. But in January, the *Washington Post* reported that Exelon spokesperson Paul Elsberg acknowledged during a hearing with the DC City Council that his company had previously objected to aspects of net-metering in some of its other jurisdictions.

DC City Councilmember Mary Cheh has expressed reservations about whether the merger would really benefit DC residents. Sandra Mattavous-Frye, who serves as the People’s Counsel and is charged with advocating for consumers through an independent agency in the DC government, filed testimony with the PSC in January, urging rejection of the proposed merger (http://www.opc-dc.gov/index.php/consumer-topics-a-z/whats-hot/1068-people-s-counsel-sandra-mattavous-frye-urges-dc-public-service-commission-to-reject-6-8-billion-pepco-exelon-merger-proposal) because it “fails to meet minimum legal criteria set forth by the Commission’s public interest standard.”

A decision by the Public Service Commission, who oversees the utility in DC, is expected sometime in the coming weeks.

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