Solarize Asheville

Photo: Asheville, NC

Asheville

CASE STUDY

SOLAR OUTREACH PARTNERSHIP

Solarize Asheville

Asheville, North Carolina, is a unique community where progressive culture blends with Appalachian tradition.[1] The county seat of Buncombe County, Asheville has a population of 87,236 (Census Bureau estimate) and covers approximately 45 square miles. It has an operating budget of $95.8 million and employs about 1,000 people. The city operates under the council-manager form of government; policy is set by the city council, which consists of a mayor and six at-large council members elected for staggered four-year terms. Day-to-day management of the city, including supervision of department heads, is handled by a professional manager hired by the council.

Creating Momentum for Solar

Sharing an appreciation for the region's natural beauty and resources, Asheville residents and civic leaders exhibit a strong sense of environmental stewardship as well as a willingness to lead by example. Perhaps one of the clearest examples of this sensibility occurred in 2006, when the community responded to a proposal by Progress Energy, the regional power company that serves the Asheville area, to construct a peak energy facility to meet demand spikes. Motivated by the perceived environmental impact of the plant on the region, Asheville's citizens mobilized politically to halt construction of the plant.

Progress Energy (which has since merged with Duke Energy) responded to the protests by inviting a number of Asheville leaders and environmentally active citizens to join a regional stakeholder group, the Community Energy Advisory Council (CEAC), to work in concert with the energy provider to develop a viable plan to meet the energy needs of the region—specifically, the management of peak demand. CEAC included representatives from local government, environmental organizations, renewable energy companies, and area businesses. Through this council, Progress Energy took the opportunity to educate its customers and community leaders about technical challenges, regulatory barriers, and a utility perspective.

CEAC met for two years and presented the utility with a series of detailed recommendations on how to meet the region's energy needs. Finding a course of action acceptable to all parties was no easy task. Maggie Ullman, chief sustainability officer for the city of Asheville, said, "CEAC meetings were attended by the company's highest-level strategic planners. . . . The head of distribution would come and talk with us, as did the president of the company, Lloyd Yates. They were putting serious people in front of us. We all got a good education on the complexity of the issues." It was clear that the utility and the community were committed to finding solutions that satisfied all interests.

The CEAC process complemented the work of the city's sustainability initiative. In 2007, Asheville convened a commission to advise the city council on the development of a carbon reduction plan. One of the goals set in that plan was to reduce carbon emissions by 2 percent per year until an overall reduction of 80 percent was achieved. In 2008, the Office of Sustainability was formed to lead that effort. Its first priority was to create the Sustainability Management Plan to guide reduction efforts and prioritize opportunities. In 2011, the plan was recognized by the American Academy of Environmental Engineers and Scientists.

Equipped with a commitment to sustainability from city leaders, the local utility, and members of CEAC, Asheville was empowered with a group of community leaders ready to take on the challenge of meeting the region's energy needs without building a new power plant. These leaders began looking for ways to increase power generation during peak demand times using solar photovoltaic (PV). Ullman said that CEAC "primed the pump" for the community's approach: "The focus was not a bunch of citizens going to the utility and saying, '*You should do this*'; it was the group saying 'This is what *we* should do.' We were empowering each other to take leadership."

Soon after the CEAC meetings concluded, a number of initiatives were created and several large-scale solar PV projects were installed in the area. For example, Evergreen Solar Farm, a 555 kilowatt (kW) array, was installed by FLS Energy on the closed Evergreen Packaging landfill; a six-acre, 1.5 megawatt solar PV system comprising 5,000 solar panels was installed at the historic Biltmore Estate;

and a number of city-owned solar-powered electric vehicle charging stations were commissioned. A few smaller rooftop solar projects were also installed.

Solarize Ashville: Keeping the Momentum Going

Another approach was to create a Solarize program. Solarize is a residential program that uses bulk purchasing to make solar PV more affordable. The Blue Ridge Sustainability Institute (BRSI), an Asheville-based nonprofit that provides leadership for sustainable economic growth throughout Western North Carolina, had just completed an effort to establish Asheville as America's first Certified Green Dining Destination. BRSI, in partnership with the Asheville Independent Restaurant Association, received a $258,000 grant from the North Carolina Board of Science and Technology's Green Business Fund provided by the American Recovery and Reinvestment Act to improve the environmental sustainability and economic success of seventeen restaurants in the city. Installing solar water heaters was part of that program. In November of 2012, BRSI met the goal, and Asheville was designated as America's first Green Dining Destination™. Solarize was an ideal program to follow this initiative as it would benefit from the publicity and momentum created from the green dining designation.

Establishing the Solarize program fell to BRSI program director, Katie Bray. In January 2013, she began by investigating how the program worked in other municipalities. She described it as a support network that helps neighborhoods "group purchase" solar to make it cheaper for everybody in the program. Solarize also streamlines the process and addresses the three big market barriers for residential solar: cost, complexity, and customer inertia. Confident in her understanding of the program, Bray put together proposals for funding and assistance. She received support for the program from the U.S. Department of Energy, philanthropists Fred and Alice Stanback, and the AB Tech Global Institute. In August 2013, she launched Solarize Asheville; inspired by the program that originated in Portland, Oregon, Solarize Asheville was the first Solarize program in the Southeast.

Lessons on Creating a Solarize Campaign

Simplifying and expediting the process of solar installation for homeowners is the hallmark of the Solarize program. Creating any program from scratch can be daunting. Fortunately, the Department of Energy's SunShot Initiative has published a guidebook that outlines different parts of the Solarize process and offers a basic structure for community groups to follow. But even after Bray became familiar with the guidebook, many questions remained. So she reached out to peers and other organizers in cities in California, Massachusetts, Minnesota, Oregon, Washington, and Wisconsin that had already established successful programs. Solarize leaders and participants from each city were helpful in answering questions and providing materials. She soon realized that there is a lot of variation among programs. In some, the campaigns work closely with city government or municipalities. In others, local utilities work in concert with campaigns by putting announcements about the program in tax notices or utility bills. In Massachusetts and Connecticut there is a state model in which one lead Solarize entity manages all the smaller campaigns in the state. In other states, campaigns are often organized by nonprofits or other independent organizers.

The biggest lesson that Bray learned as she investigated Solarize is that there is no set orthodoxy about how to proceed with a local campaign. Solarize is, by definition, a grassroots effort, so there is no formal template or structure that a group is required to follow. Generally, organizers create a localized campaign informed by the strengths and challenges of the community they live in as well as of the local market. For example, solar installation at the residential level is often easier in California than in North Carolina because the low cost of coal and fossil fuel used by many utilities in the South to generate power makes electricity cheap. Add to that a fairly long payback time, and it can be difficult to make a strong economic case for solar for many people. The lack of third-party financing also makes solar PV challenging in North Carolina. As Bray said, "The PPA [power purchase agreement] or lease model is what really makes the economics of solar work. Bottom line, you design the campaign around the conditions and resources that you have."

Getting the right people involved is crucial, which Bray recognized early. She could not run the campaign by herself so she first needed "champions" who could help spread the word and reach out to their communities. She found a resource at the city's Neighborhood Profile: Five Points Neighborhood office, where she learned which neighborhoods were the most organized and had the most active leadership and outreach channels already in place. With that information, she selected five neighborhoods that she believed had the most prospective customers and

volunteers to help. She first gave presentations at neighborhood meetings, asking attendees to participate as solar coordinator champions. "I found people first, and then if I had a communication or an announcement I wanted to get out about the program, I would give it to them and they would send it out in their neighborhood newsletters and put in on the Facebook page and such," she said. "That's the neighborhood model—the kind of peer to peer, word of mouth, somebody hearing about it from someone that they trust and know."

One of the people she recruited as a solar champion was Matt Menne, who saw an article in the local newspaper that listed the target neighborhoods, one of which—Norwood Park—was his own. Menne contacted Bray and soon got involved. "I was involved in all aspects of organizing Solarize Asheville from doing the request for proposals for solar companies, and figuring out how we were going to do the messaging and get the word out," he said. "We used the neighborhood association e-mail list and canvassed the neighborhood with fliers to get the word out." Bray said that Menne was a key part of the success of the campaign.

Solar 101: The Mechanics of Solarize

All of this work culminated in a workshop, Solar 101, held in August 2013 to generate interest and enroll people in the program. About 200 people showed up, making it, at the time, the biggest event of its kind in the Solarize movement's history. At the workshop, representatives from key aspects of the campaign gave short presentations on how the Solarize program works, their role in the process, and how residents could get solar installed on their homes.

Representatives from the Department of Energy and from Boston-based Admirals Bank, which had worked with other Solarize programs around the country and was Solarize Asheville's financing partner, discussed the investment side of solar and why it makes sense. A tax expert was also on hand to address tax issues for the homeowner. Admirals Bank describes the loan program: "Homeowners can borrow up to $40,000 for residential solar systems. They can apply for and use any rebates, tax credits or incentive monies they may receive to the principal balance of their loan within the first 24 months of the fund date. If a homeowner chooses this option he or she may then re-amortize their loan at no cost to reduce his or her monthly payments. Loans provided are non-equity based and homeowners may receive the funds in as little as 12 days, prior to the system being installed."[2]

North Carolina offers several incentives that make this a particularly good deal. Homeowners are eligible for the 30 percent federal tax credit and a 35 percent state credit. These rebates, coupled with the benefit of bulk purchasing, which averages to be about 26 percent off the retail cost of a solar unit, makes residential solar an attractive option.

Also at the workshop were representatives from Sundance Power Systems, the installer that was selected to work with Solarize Ashville. Sundance (also a member of CEAC) was selected through a competitive bidding process that included a request for proposals to thirty-four solar installers in the Southeast. Having an installer already vetted increased confidence among residents and helped reduce a common complexity—finding the best installer—of transitioning to solar energy. Staff from Sundance was able to address other common questions about the technical and logistical side of solar energy;

Solarize kickoff with Katie Bray and Matt Menee

Solarize101

Array on the home of Matt Menee

Solarize Homes

clearing these issues up early on helped maintain momentum. If it takes too long to get things in motion, or the permit process is too confusing or requires multiple visits to city offices, customers will often lose interest. Bray suggested that the soft costs associated with permitting, inspection, utility interconnection, and financing solar can account for 40 – 50 percent of the cost of a system. One of the main goals of Solarize, then, is to minimize many of these soft costs.

For Menne, the benefit of Solarize was that it gave people a place to start, including access to credible information. "There is a lot of interest in going solar, but people struggle with how you get the information necessary to actually go about installing solar on your own." Solarize Asheville sorted out technical, tax, and financial issues that must be considered and answered before the decision is made to install. As a result of Solarize Asheville's work and Menne's advocacy, about a dozen people in his neighborhood (including Menne) purchased a system.

Weaknesses and Challenges Within the Solarize Program

By all accounts, the Solarize Asheville program was a success. It resulted in fifty-two signed contracts with an average system size of 5.2 kW. Bray's success led to her involvement in other programs in the state. She advised Solarize campaigns in Carrboro, Charlotte, and Durham, which were also successful. While she believes in the Solarize program, Bray made note of what she sees are some of its inherent weaknesses and challenges. For example, it was difficult for a single installer to keep up with the demand of so many new

Solarize Homes

customers at once. Solarize campaigns are typically one-time programs. In a relatively short period of time, the designated installer must make many more new site visits than it would under normal circumstances, which creates pressure on the installer and, potentially, on the customer. Many local installers do not have the staff or infrastructure to handle the demand spike.

Another challenge is that Solarize programs often exclude many residents. While the program offers a streamlined approached to borrowing funds to pay for the system, residents must be able to qualify for the loan process, which may preclude participation for lower-income residents. Additionally, a resident must have a suitable site for installation—either a roof or space for a ground-mounted system—which means that renters are not eligible for solar under this program. For residents who can and do take advantage of solar, they

can apply for and reap the benefits of the tax credit offered once they purchase and install the system.

Bray also mentioned that the Solarize program overlooks energy efficiency strategies that more people could and should take advantage of, whether before or in tandem with installing solar. "Going solar without maximizing the efficiency of your home first is like buying a new efficient car and driving it around with flat tires," she said. Finally, she believes that since Solarize was developed as a residential program, it misses an opportunity to install solar more broadly. The business community could benefit from a similar model, but to date, the program has not been organized to include businesses.

Lessons Learned

As noted above, there is no one template that an organizer can or should use to create a campaign. Rather, any campaign should be informed by the strengths and challenges of the particular community involved. Bray took that lesson to heart and created a new program, Clean Energy for Us, that emphasizes efficiency and solar; uses more than one installer; and is open to homes, businesses, and nonprofits. The program is still in pilot form, but Bray has tested it in Buncombe County, Western North Carolina, and in Raleigh, the state's capital.

Whether Solarize or Clean Energy for Us, these kinds of initiatives help communities and local governments make the shift to renewable and clean energy. Any type of solar campaign that educates consumers is worthwhile. Streamlining the processes associated with financing models, incentives, permits, codes, and other related issues is both helpful and essential if cities and communities are to deploy more solar. Solarize provides a valuable example in how to accomplish that.

Even if a local government is not involved with the Solarize campaign, it can benefit from its existence. For instance, the momentum created by such a campaign can increase support for other local government goals and initiatives. Specifically, Solarize programs can help local governments implement sustainability measures by transitioning them "from a traditional direct-procurement role of building solar installations on public facilities to a facilitation role of bringing community members together to make residential solar energy a reality. This shifts governments' focus from investments of money to investments of time. It can also reframe energy efficiency and renewable energy initiatives from cost effective *versus* sustainable to cost effective *and* sustainable."[3]

By taking advantage of the lessons that Solarize programs provide in bulk purchasing, local governments can be more effective in expanding solar on municipal facilities and across jurisdictions. "In addition to providing an opportunity to negotiate volume discounts, collaborative procurement also allows for bundling sites together based on the size of the system to be installed at each location. Such bundling can reduce solar installation labor costs, as installers can more efficiently allocate their time."[4]

Solarize programs in general provide effective examples of how to expand the solar market for an entire community. In the case of Solarize Ashville, this well-planned and executed campaign provides a detailed picture of how to create a solar campaign as well as lessons on how to modify and tailor a local initiative to make any Solarize program in any market successful. As Bray said, "the support network for Solarize campaigns around the country is significant. You have volunteers and leaders in the community who are committed to the idea. And you have great installers who know what they're doing. It's a strong model. I've never heard of any [Solarize] campaign that hasn't worked."

Interviews and Contacts

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Endnotes

1. Unless otherwise noted, all information in this case study was obtained through interviews with the individuals listed under "Contacts."
2. "Admirals Bank is to be the Exclusive Financing Resource of the Solarize Asheville Initiative," http://www.admiralsbank.com/news/press-releases/solarize-NC.
3. Jason Coughlin, "Making Solar Energy Accessible to Communities," PM (November 2012): 28, http://webapps.icma.org/pm/9410/public/solar.cfm?title=Solar%20Communities&subtitle=&author.
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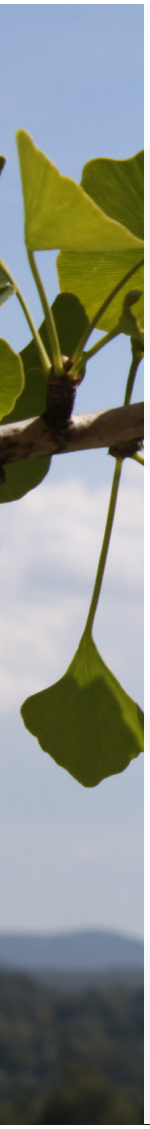

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