

ISSUE BRIEF

VOTE SOLAR'S ACCESS & EQUITY ADVISORY COMMITTEE

RECOMMENDATIONS TO MITIGATE HOUSING BARRIERS TO LOW-INCOME RESIDENTIAL SOLAR PROGRAMS

By: Brandy A. Hyatt and Olivia Nedd

Edited By: The Vote Solar Access & Equity Advisory Committee (AEAC)

Designer: BF Studios



ABOUT VOTE SOLAR

Vote Solar is a nonprofit solar advocacy organization that advocates for equitable access to clean energy in legislative and regulatory arenas at the state level. Our mission is to achieve a just and equitable transition to 100% clean power across the U.S. by 2050, with a majority of our energy coming from solar. We work to repower our communities with sunshine and build a thriving clean economy with affordable solar energy for all.

ISSUE BRIEF SUMMARY

The Access & Equity Advisory Committee Recommendations to Mitigate Housing Barriers to Low-Income Residential Solar Programs issue brief presents policy and programmatic solutions that are designed to reduce barriers for single family low-income homeowners¹ who desire to install solar on their homes. Low-income homeowners typically have higher deferred maintenance, which can be a huge barrier to solar. The deferred maintenance and home upgrades needed for a home to become solar ready increases the cost of solar for low-income homeowners. The recommendations discussed in this brief can reduce roadblocks for families in homes that require certain home improvements before installing solar. The AEAC recommends the Coordination of Existing Resources and the Augmenting Existing Resources, in tandem with, Adding New Resources.

ABOUT THE ADVISORY COMMITTEE

The Access & Equity Advisory Committee (AEAC) is composed of clean energy experts and providers who currently work to deliver the benefits of clean energy to under-resourced communities. Led by Vote Solar's Access & Equity Team, the AEAC works to address barriers to low-income solar program implementation. The work includes developing and sharing solutions on how to make solar deployment more accessible and affordable for low-income communities.

Vote Solar established the AEAC in 2020 with the overall objective to identify implementation issues with low-income solar programs and to offer solutions to program implementation problems. During the spring of 2021, Vote Solar staff conducted interviews with 14 experts and community members. These interviews resulted in a list of low-income housing condition issues that required further exploration. On June 16, 2021, Vote Solar brought the AEAC together in a workshop to discuss two topics that rose to the top: Process for **Repairs or Upgrades for Low-Income Homeowners** and Financing for Repairs or Upgrades for Low-**Income Homeowners.** The June convening yielded policy recommendations that can streamline the process for homeowners, and increase funding for upgrades to enable solar.

ACKNOWLEDGEMENTS

The authors wish to offer a special thank you to the members of the Access and Equity Advisory Committee for offering their time, expertise and support to the AEAC and the policy brief: Zoey Burrows, GRID Alternatives; Ryan Harry; Zaid Ashai, Nexamp; Beth Galante, PosiGen; Sherrie Villmark, Community Energy Project; Corey Ramsden, Solar United Neighbors; and John Delurey, Vote Solar. Additionally, thank you to Melanie Santiago-Mosier, Managing Director for Access & Equity, Vote Solar, for her additional support.

¹ "Income Limits." United States Department of Housing and Urban Development, Office of Policy Development and Research, (Accessed July 2021). <u>www.huduser.gov/portal/datasets/il.html#2021_query</u>. This issue brief uses the Area Median Income (AMI) definition utilized by the United States Department of Housing and Urban Development (HUD) definition of low income. Low-income is defined as "Households less than 80% of the AMI are considered low-income households." HUD's use of AMI is used to determine eliqibility for affordable housing programs at the federal level. HUD calculates the AMI each year for each geographic region in the country.

INTRODUCTION

A family's home is central to their daily lives, and for many families a healthy home promotes safe, decent, and sanitary conditions as a means to prevent disease and injury.² A single-family home represents one of the largest expenditures a family will make, and can also serve as a source of wealth for that family. This is especially true for low-income homeowners. When considering the surprising number of health and financial challenges directly related to the physical condition of the home, the importance of quality housing increases. The age of housing stock in America varies significantly by region. According to the 2019 American Community Survey,³ the median age of owner-occupied homes was 39 years.⁴ Older homes tend to be far less energy efficient than newer homes for a number of reasons; for example, an older home might have older appliances and poorer insulation. It is estimated that "35 million, 25%, U.S. homes have one or more healthy or safety hazards that can cause significant illness, injury, and even death; but these risks are not equally distributed across the nation."⁵



² "Making Homes Healthier for Families." U.S. Department of Housing and Urban Development (Accessed June 2021) https://www.hud.gov/program_offices/healthy_homes/healthyhomes.

³ "About The American Community Survey." United States Census Bureau (Accessed June 2021) <u>https://www.census.gov/programs-surveys/acs/about.html</u>. The American Community Survey (ACS) is an ongoing survey that provides vital information on a yearly basis about the demographics of our nation.

⁴ "Age of Housing Stock by State." National Association of Home Builders (Accessed June 2021) https://eyeonhousing.org/2021/03/age-of-housing-stock-by-state-3/.

⁵ "Jobs, Climate, Health, Equity: The Case for (Healthy) Housing as Critical Infrastructure." National Center for Healthy Housing (Accessed June 2021) <u>https://nchh.org/2021/04/jobs-climate-health-equity_the-case-for-healthy-housing-as-critical-infrastructure/</u>.



Aging homes require consistent and proactive maintenance, but when household budgets are limited that maintenance may be deferred. Deferred maintenance for homes can include solar readiness⁶, weatherization⁷, energy-efficiency upgrades and roof replacement. While all are important to improving quality of life, physical quality of the home and maximizing the benefits of solar, home upgrades can exacerbate the cost of installing solar, often making installation unaffordable for low-income homeowners.

As states increase deployment of solar to meet clean energy goals, the quality and condition of low-income single family homes will present an increasing barrier for low-income solar program implementation. policymakers and program administrators will need to seriously consider solutions for this group of homeowners⁸, because they represent a significant target for solar installations to be adopted broadly and equitably.. Low-income families live in a variety of housing situations, and for the purposes of this issue brief we will focus our discussion on lowincome single family home⁹ owners.

This issue brief will provide an overview of the quality and condition of low-income single-family homes, along with the challenges that homeowners face when seeking to make upgrades and repairs. This issue brief will also discuss opportunities for policymakers to help low-income homeowners finance necessary upgrades in order to install solar.

⁶ "Do you have a solar ready home?" Energy Sage (August 2021) <u>https://news.energysage.com/solar-ready-home/</u>.

⁷ "Weatherize." U.S. Department of Energy (August 2021) <u>https://www.census.gov/housing/hvs/files/currenthvspress.pdf</u>.

⁸ "Quarterly Residential Vacancies and Homeownership, Second Quarter 2021." U.S. Census (July 2021) https://www.census.gov/housing/hvs/files/currenthvspress.pdf.

⁹ In this issue brief, "Single Family Home" is defined as a residential dwelling intended for occupancy by one family. A single family home may be attached or detached. An attached dwelling is on a single lot that has a side wall in common with another adjoining lot. A detached lot is a dwelling on a single lot that is separate from other dwellings.

QUALITY AND CONDITION OF THE HOME

This issue brief focuses primarily on ways the quality of a home can present challenges to installing solar. However, it is worth briefly discussing how the quality of a person's home can be a determinant of their overall quality of life. Often, the environment is regarded as purely external, and evokes images of planting more trees in a neighborhood or closing down a fossil fuel power plant. However, homes should be considered an important element of the built environment that contributes to a family's health and well-being. In the report *Moving environmental justice indoors: understanding structural influences on residential exposure patterns in low-income communities authors explore the adverse effects of poor housing on low-income communities.*¹⁰



¹⁰ "Moving Environment Justice indoors: Understanding Structural Influences on Residential Exposure Patterns in Low-Income Communities." Gary Adamkiewicz, Ami R. Zota, M. Patricia Fabia, Teresa Chahine, Rhona Julien, John D. Spengler, and Jonathan I. Levy (December 2011) <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3222513/</u>.

Additionally, according to the Office of Disease Prevention and Health Promotion, the top five determinants of a healthy person are:¹¹

1

Economic Stability;

- 2 Education;
- 3 Health and Healthcare;
- 4 Neighborhood and Built Environment, and;
- 5 Social and Community Context.

The fourth determinant, Neighborhood and Built Environment, includes quality of the home¹². There has been an increase in research related to home and health, yielding increasing evidence that poor housing can decrease a person's lifespan. Inadequate housing can lead to a variety of health issues, such as respiratory infections resulting from the absence of hot water or overcrowding, or chronic diseases such as asthma resulting from old carpet or the presence of toxic chemicals.¹³ Health issues can often correlate with deferred maintenance.

"Measuring the scope and magnitude of housing repair needs is fundamental to developing effective policy and programmatic solutions."¹⁴

BARRIERS TO CONDUCTING REPAIRS AND UPGRADES

A low-income homeowner interested in adding solar faces a number of decisions and competing household priorities. The cost and prioritization of repairs and upgrades, along with navigating the process to funding and making those improvements can be overwhelming. The litany of barriers may prevent a homeowner from moving towards their goal of solar. Policymakers should work to understand these barriers, and seek to design supports for low-income homeowners.

ACCESS TO CAPITAL

A major barrier for low-income homeowners seeking to make repairs and upgrades to their home is the upfront cost. The reality is, many lowincome families do not have the money to make home repairs at all. Considering that home repairs to allow for the installation of solar could become very expensive (the national average cost to replace a roof is between \$5,500 and \$11,000,¹⁵ and the average cost for moderate roof repairs can range from \$400 to \$1,200.¹⁶), this lack of affordability becomes even more acute. In 2018, "low-income,

¹⁴ "The Real Cost of Home Repairs." Policymap (Accessed July 2021) <u>https://www.policymap.com/issues/housing-quality/</u>.

¹¹ "Quality of Housing." U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion (Accessed July 2021) <u>https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/quality-of-housing</u>.

¹² "Social Determinants of Health." U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion (Accessed August 2021) https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/guality-of-housing.

¹³ "Housing and Health: Time Again for Public Health Action." James Krieger, and Donna L. Higgins (May 2002) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1447157/.

¹⁵ "How Much Does a Roof Replacement Cost." Christian Perry and Lexie Pelchen, Forbes Advisor (June 2021) <u>https://www.forbes.com/advisor/home-improvement/cost-to-replace-roof/</u>.

¹⁶ "Roof Repair Cost: Minor and Major Repairs in 2021." Alex M. Boesky (May 2021) https://www.roofingcalc.com/roof-repair-cost/.

older homeowners had the highest average repair cost across groups about \$4,187."¹⁷ Low-income individuals may not have the credit score to obtain a loan, which hinders their ability to make upgrades. Homeowners should be encouraged to make upgrades and improvements through policies and programs that can minimize the upfront cost.

States and local governments also have limited amounts of money to help support low-income customers. The cost of outreach, education, and the actual upgrades for low-income homes can be costly. However, for the sake of health and for solar to be more equitably deployed across the nation, the cost of supporting low-income customers in making the needed repairs should not be a deterrent.

TRUST

Many low-income and communities of color distrust representatives who come to them offering programs and opportunities that may sound "too good to be true.¹⁸ It is vital that policymakers and program administrators act with intention to build trust in these communities, and for the communities to trust the entities or organizations designated to help them make home upgrades, repairs, and to install solar. "Often the targets of scams, customers in low-income communities may be distrustful of claims relating to energy bill savings and may have concerns about their privacy."¹⁹



¹⁷ "The Cost to Repair America's Housing Stock—and Which Homes Need It the Most." Eileen Divringi, Eliza Wallace, Keith Wardrip, and Elizabeth Nash. Federal Reserve Bank of Philadelphia and PolicyMap (2019) <u>https://housingmatters.urban.org/research-summary/cost-repair-americas-housing-stock-and-which-homes-need-it-most</u>.

¹⁸ Case Study: Colorado's Approach to Low-Income Community Solar Programs that Leverage Weatherization Networks" Better Buildings, Department of Energy (Access July 2021) <u>https://betterbuildingssolutioncenter.energy.gov/sites/default/files/Case%20Study_Colorado_final.pdf</u>.

¹⁹ "Unlocking Participation." Low-income Solar Policy Guide <u>https://www.lowincomesolar.org/why-act/unlocking-participation/</u>.

DATA COLLECTION, TRACKING AND ACCESS

Despite the increased awareness on the importance of collecting sociodemographic data, more data collection is needed, specifically on the topic of housing stock and who occupies different types, ages, and qualities of homes. This type of data collection is critical for policymakers to understand the need when it comes to home upgrades and repairs to accommodate solar. Sociodemographic data is important to collect, which can include income, age, education, marital status and much more. In order to identify which single family lowincome homes need attention the most, states and organizations need access to relevant data and tracking tools. Barriers to data collection can include leaving out certain data points, based on perceived relevance or an aversion to collecting sensitive information from individuals or households.

Once a home has solar installed, another barrier to data collection relates to access to broadband internet service to track whether their solar array is down or in need of maintenance. Low-income households tend to have less access to internet services.²⁰ This is even more of an issue for rural communities who are less likely to have access to the internet.²¹

Vermont's One Touch Program, led by the state's Weatherization program, is a one touch e-referral program that connects health, energy, and home. Visiting and repair programs to costeffectively improve health outcomes and reduce home energy use. This program is the first in the country to include healthy home assessments in state supported weatherization projects for single family homes. The one touch tool helps to connect households to resources that reduce energy burden and improve health. Vermont's One Touch Program is a collaborative effort between the Vermont Office of Economic Opportunity (OEO), Tohn Environmental Strategies which developed the One Touch approach, and private and public partners. Participating partners that "touch" a home use a common home assessment and e-referral system to ensure that identified triggers result in referrals to organizations that can provide relevant resources. This has resulted in cost-effective delivery of service, support of mutual goals, and reduced administrative costs. New Hampshire and Vermont have implemented the program statewide.²²

²⁰ "People in Low-Income Households Have Less Access to Internet Services." Kendall Swenson and Robin Ghertner, Office of the Assistant Secretary for Planning & Evaluation, U.S. Department of Health & Human Services (April 2020) <u>https://aspe.hhs.gov/system/files/pdf/263601/Internet_Access_Among_Low_Income.pdf</u>.

²¹ Ibid.

²² Vermont One Touch, One Touch (Accessed July 2021) <u>https://onetouchhousing.com/overview/</u>.



Photo taken by Grid Alternatives

KNOWLEDGE AND EDUCATION

Knowledge and education as a barrier to home upgrades and repairs flows in both directions, with the customer on one end, and policymakers and service organizations on the other. Customers need targeted and customized support and education to understand various types of upgrades they may want to consider, the cost and information on how to navigate processes for obtaining the upgrades. Access to information can increase awareness and appetite to make those upgrades. Additionally, there is a need to educate policymakers and organizations as to what community needs are.

SILOED PRACTICES AND ORGANIZATIONAL CAPACITY

Siloed practices cause entities such as state or local government agencies to narrowly focus on their own specific issues, rather than understanding the bigger picture surrounding solar for under-resourced communities and homeowners. Efforts towards reducing energy burden and improving health of lowincome households must not be scattered across agencies and organizations without coordination. It is imperative that agencies and service providers collaborate and communicate. Unfortunately, lack of organizational capacity within these organizations hinders efforts to coordinate efforts with others. When agencies and service providers are not equipped and resourced to assume the additional responsibilities of coordinated work, there are additional challenges to overcome, including delayed services and decision making, duplicative resources, and poor delivery of services. Underresourced communities, the service providers who seek to work with them, and advocates for these communities are all too familiar with these problems.



Photo taken by Grid Alternatives

AEAC RECOMMENDATIONS

The AEAC recommends the **Coordination of Existing Resources** and **Augmenting Existing Resources** as solutions that can streamline lowincome residential solar programs and can break down home-related barriers to solar for low-income solar customers. Below, we outline how to best apply the policy recommendations, as well as examples of implementation.

COORDINATE EXISTING RESOURCES

A variety of government agencies and service providers that administer programs relating to home health and safety, include energy upgrades like solar. Because of this, there can be a decreased need to develop new programs. Rather, policymakers, program administrators, and service providers would do well to examine the range of services that are offered by their counterparts, and make efforts to coordinate and streamline how those services are deployed. When examining how to coordinate, these agencies and service providers must recognize that deferred maintenance is a significant barrier to installing solar for low-income homeowners. Further, low-income residential solar programs usually do not include funding to make older homes ready for solar; thus, many homeowners are left out of solar programs. However, if agencies and service providers that offer services relating to home upgrades and energy upgrades coordinate their efforts, these barriers can be broken down and program offerings deployed more efficiently. Below are ways residential solar programs administrators and installers can connect with complementing agencies and programs to remove home-related barriers to solar for low-income homeowners.

CREATE A ONE-STOP-SHOP FOR LOW-INCOME HOMEOWNERS TO ACCESS HOME REPAIR AND ENERGY SERVICES

Creating a One-Stop Shop, or a singular point of entry for homeowners to access programs, can be an effective way to minimize customer burden and streamline low-income customer acquisition. As previously mentioned, programs for low-income homeowners are siloed. Solar programs and housing repair programs for low-income homeowners do not always communicate and creating a one-stop shop would ensure that low-income homeowners are connected with all of the resources they need to go solar. The one-stop also benefits program administrators and solar providers by having low-income customers in one central database. With a one-stop shop program administrators can easily connect customers with solar providers. This can also minimize administrative costs such as: advertising, marketing, database creation and more. The one-stop shop is not a cure all and conducting intake this way can lead to other administration issues. It is important to evaluate current systems already in place before implementing this solution.

The one-stop shop would give low-income homeowners a path from home repair to energy efficiency upgrades to solar installation. This would reduce customer burden by:



SINGULAR CONTACT PERSON

Since programs are siloed, this puts undue burden on the customer to communicate with numerous people. Having one contact person minimizes that stress of keeping up with multiple contacts for different programs.



ONE-TIME APPLICATION

Low-income people are often forced to reproduce the same supporting documents to multiple programs and organizations. With a one-stop shop, this would mean customers would only need to produce documents once. The Built To Last Program, is a coalition led by the Philadelphia Energy Authority (PEA) to rethink how Philadelphia can improve housing for low-income homeowners. PEA acts as an administrative backbone to allow housing programs to layer and streamline their services. The PEA offers assistance and financing solutions to help streamline the process of executing energy upgrades and solar installation on affordable multifamily housing units.²³

²³ "Affordable Residential" Philadelphia Energy Authority (Access July 2021) https://philaenergy.org/programs-initiatives/residential/.

EDUCATION AND INFORMATION SHARING

Short of establishing a one-stop, single point of entry for homeowners, one of the easiest ways to break down the barriers relating to deferred maintenance is education and information sharing. Often, low-income homeowners are unaware of programs that can help with home improvements. This, as mentioned earlier, can be due to siloing between programs and services for low-income communities.

For example, imagine a solar installer has a potential low-income customer that meets all of the program criteria for a low-income solar installation (incomebased eligibility, for example); however, in this scenario the customer has difficulty moving ahead with the installation because they have an old electrical panel that prevents safe connection and energization of the solar array. Moreover, if this customer has other issues with the home, such as air gaps, the solar installation will not be enough to solve the customer's need for solutions to assist in reducing their energy burden in the home: in this case, the customer also needs assistance with weatherization. In most cases like this, solar programs and installers do not have additional funding or financing options to help with those home repair issues, and so the customer cannot move forward with the program. If programs and services for lowincome homeowners were to share information and communicate with one another, they could create a pathway for customers like the one in this scenario to obtain assistance with deferred maintenance, and then to the solar installation.

One example of better coordination is enabling low-income residential solar programs to work with administrators of federally funded programs like Low Income Home Energy Assistance Program (LIHEAP) or Weatherization Assistance Program (WAP) to find potential low-income homeowners that would benefit from solar, and to assist with other needs that must be met before the solar installation proceeds. LIHEAP "assists eligible low-income households with their heating and cooling energy costs, bill payment assistance, energy crisis assistance, weatherization and energy-related home repairs,²⁴ and WAP "reduces energy costs for low-income households by increasing the energy efficiency of the homes while ensuring the resident's health and safety."25 LIHEAP and WAP would give potential lowincome solar customers the opportunity to make the necessary improvements to their home to get it ready for solar. Moreover, if a low-income residential solar program is administered by the state, the solar program can work with their local LIHEAP and WAP offices to find potential income-gualified customers. This would make it easier for the solar program and solar installers to find low-income homeowners with solar ready homes; and it would ease the burden of the customer by requiring fewer steps to go solar.²⁶

²⁴ "Low-Income Home Energy Assistance Program (LIHEAP)" Benefits.gov. (Access July 2021) <u>https://www.benefits.gov/benefit/623</u>.

²⁵ "About the Weatherization Assistance Program." U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy (Accessed July 2021) https://www.energy.gov/eere/wap/about-weatherization-assistance-program.

²⁶ "Recommendations on Automatic Qualification and Community Engagement for State Policy-Enabled Low- and Moderate-Income Community Solar Programs" Vote Solar's Access and Equity Advisory Committee (February 2021) <u>https://votesolar.org/wp-content/uploads/2021/03/Vote-Solar-Policy-Brief-V4.pdf</u>. **Colorado's Office of Energy (CEO) Weatherization Assistance Program (WAP)** offers rooftop solar to its applicants on a limited basis. Colorado is the first state in the United States to receive approval from the U.S. Department of Energy (DOE) to integrate rooftop solar into WAP. The CEO WAP includes rooftop PV as a measure to specifically target expensive residential electricity expenditures.²⁷ The CEO created a pilot leveraging eligible WAP funding and matching incentives from Xcel Energy Colorado, aiming to comprehensively address energy burden through weatherization and solar for 300 low-income households by 2019.²⁸

COMBINE FUNDING ACROSS PROGRAMS

Another way to alleviate barriers to low-income residential solar that relate to the condition of the home, is combining funding across programs. By partnering with other agencies and organizations, a solar program can create a more holistic program that gives low-income homeowners the support they need to make the necessary home repairs to go solar. Reaching out and collaborating with local businesses, organizations and government bodies on solar installations can reduce cost for lowincome solar customers and installers. Additionally, the creation of these multifaceted programs not only decrease energy bills, create healthier homes, but can provide low-income communities with job opportunities as well. Combining funding does not have to be limited to energy efficiency or home improvement specific programs. As mentioned throughout this brief, poor quality of home can equal poor health for low-income households. Some solar programs have found allies in places like local hospitals and universities. For example, The Connecticut Children's Hospital Healthy Homes Program provides energy assessments and remediation for lead and other health hazards for income gualified homes. Qualified homeowners can apply for a grant to fund home improvement projects that help with creating a higher quality home. Low-income solar program administrators can work with these programs to cover housing repair costs, like mold removal and heating pump replacements, for their low-income customers. With such limited funding for low-income programs it's vital to be creative and form partnerships.

²⁷ "Rooftop Solar Photovoltaic Program" Colorado Office of Energy. (Access July 2021) https://energyoffice.colorado.gov/rooftop-solar-pv.

²⁸ "Recommendations on Automatic Qualification and Community Engagement for State Policy-Enabled Low- and Moderate-Income Community Solar Programs" Vote Solar's Access and Equity Advisory Committee (February 2021) <u>https://votesolar.org/wp-content/uploads/2021/03/Vote-Solar-Policy-Brief-V4.pdf</u>.



AUGMENT EXISTING RESOURCES AND ADD NEW RESOURCES

Limited funding across programs that may assist with home repairs, energy assistance, and solar presents a significant barrier for low-income homeowners and program administrators. Low-income programs are notoriously underfunded and many have long waiting lists. In order to increase financial assistance to low-income homeowners for home repairs and solar installation there needs to be an increase in low-income program funding.

INCREASING LOW-INCOME PROGRAM FUNDING

Typically low-income homeowners cannot pay for solar installation upfront, so having access to government funding of low-income solar and home improvement programs helps offset cost to the homeowners. Government agencies and program administrators can request additional funding through budget and grant proposals. For example, in California, Assembly Bill 2723²⁹, passed in 2006, "directed that a minimum of 10% of California Solar Initiative funds be set aside for programs assisting low-income households in Investor Owned Utility (IOU) service territories. Originally scheduled to sunset in 2015, the Disadvantaged Communities, Single-Family Solar Homes (DAC-SASH) program has been extended to 2030".³⁰

GREEN BANKS

Creating a green bank is another great way to increase funding for low-income solar projects and housing repair programs. "Green banks are fully or partially funded state financial institutions that support affordable financing for clean energy or environmentally beneficial projects. While the structure of green banks differs from one state to another, there is generally a focus on partnering with private institutions on project finance and long-term market development."³¹ Green banks are able to leverage resources and lower cost for solar installers, solar customers and funds can be used for energy efficiency upgrades.

29 "Assembly Bill No. 2723" CA.gov. (Access July 2021) https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200520060AB2723.

³¹ "Green Banks" Low Income Solar Policy Guide (Accessed July 2021) https://www.lowincomesolar.org/toolbox/green-banks/.

³⁰ "About DAC-SASH." Grid Alternatives (Accessed July 2021) <u>https://gridalternatives.org/what-we-do/program-administration/dac-sash</u>

Connecticut Green Bank's Solar For All Program, was created in 2015, in partnership with **PosiGen** to bring solar and energy efficiency to underserved communities across the state. CT Green Bank was able to partner with "local credit unions and Community Development Financial Institutions (CDFIs) to offer a Smart-E Loan to customers with a credit score of at least 580, providing low-cost financing for a variety of energy upgrades, including solar."³²

PHILANTHROPY

Another way to expand funding for solar installations and housing repairs for low-income homeowners is through philanthropy. Currently, there are minimal residential solar programs funded through philanthropy, but we can learn from nonprofit-led commercial projects on how philanthropy funds can be used. From foundations to donor-advised funds (DAFs) to individual giving, there is untapped funding in the charitable space, especially for lowincome solar projects. "Total estimated charitable contributions in the United States in 2019 were \$449.64 billion. Individual giving accounted for \$309.66 billion, or 69 percent of all charitable giving in the U.S., in 2019. Contributions to DAFs have increased as a share of individual giving over the past decade. For 2019, DAF donors contributed an estimated \$38.81 billion, or the equivalent of 12.7 percent of individual giving."33 Philanthropic funds can be used to fill the gaps in funding around housing upgrades and repairs for low-income customers, removing the cost burden for both customer and provider or program administrator.

An example of how philanthropy can fund solar projects is Re-Volv. Re-Volv is a non-profit solar developer. The organization raises investment funds through charitable donations. To date, Re-Volv has funded 43 solar projects, 13% of those projects being for health-focused nonprofits and 19% for housing-focused nonprofits.³⁴ Many of Re-Volv's projects, not only install solar, but also make necessary energy efficiency upgrades to ensure solar installations are efficient and long lasting. Although Re-Volv specifically works on solar installations for non-profit organizations, this model could easily be retooled and used for residential solar projects.



Photo taken by Grid Alternatives

³³ "Donor-Advised Fund Report" National Philanthropic Trust (2020)

https://www.nptrust.org/reports/daf-report/?gclid=CjwKCAjwlrgHBhByEiwAnLmYUIYwtr3wlgRfC3iCCOmjMOo4-f6_b8aaaZXPUvNLdi4NIwc-Ab1HEBoCJ-IQAvD_BwE

³⁴ "Completed Projects" Re-Volv (Accessed July 2021) <u>https://re-volv.org/projects/completed_projects</u>.



Photo taken by Grid Alternatives

CONCLUSION

Eliminating the barriers to solar that arise when single family low-income homes require repairs or upgrades first, presents an important prerequisite to extend the benefits of solar. Policymakers and program administrators interested in developing meaningful solutions that leverage federal, state, and local dollars must approach the work from a stance of collaboration and transparency. When partners work together to deliver health and energy services, they can more effectively deliver energy savings and improved health outcomes.

The recommendations presented here can assist administrators of state designed low-income solar programs to streamline program implementation, which ultimately ensures that the benefits of solar are distributed equitably. The AEAC hopes to continue exploring and sharing solutions that bring about an equitable clean energy future.



