October 27, 2022

U.S. Department of Housing and Urban Development
Lauren Ross
Senior Advisor for Housing and Sustainability
Office of Multifamily Housing
451 7th Street SW
Room 6106
Washington, DC 20410-0500
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SUBJECT: Comments from the Connecticut Green Bank – Request for Information: Green and Resilient Retrofit Program – Docket ID No. FR-6350-N-01

To Ms. Lauren Ross:

The Connecticut Green Bank ("Green Bank") appreciates the U.S. Department of Housing and Urban Development's ("HUD") efforts to issue this request for Information for the Green and Resilient Retrofit Program ("GRRP"). GRRP invites public comment on the design and implementation of the $837.5 million available to HUD under the Inflation Reduction Act of 2022 ("IRA") for the provision of loans and grants to fund projects that improve energy or water efficiency, enhance indoor air quality or sustainability, implement the use of zero-emission electricity generation, low-emission building materials or processes, energy storage, or building electrification strategies, and/or address climate resilience.

Background

There are numerous public policies in Connecticut that support HUD's goals and the Biden Administration's policies, including:

- **Reduce Emissions** – Public Act 08-98 "An Act Concerning Connecticut Global Warming Solutions," establishes greenhouse gas ("GHG") emission reduction targets for 2010, 2020, [2030, 2040] and 2050.[1]

- **Increase Resiliency** – Public Act 18-82 "An Act Concerning Climate Change Planning and Resiliency," establishes planning requirements to increase the state's resilience against the impacts of climate change, and Public Act 20-05 "An Act Concerning Emergency Response by

[1] It should be noted, that through Public Act 18-82, a 45% reduction of GHG emissions from 2001 levels by 2030 was established. This target is consistent with President Biden's 50% reduction of GHG emissions from 2005 levels by 2030. And, through the passage of Public Act 22-5, that a 100% zero carbon electric sector by 2040 was established.

Electric Distribution Companies, the Regulation of Other Public Utilities and Nexus Provisions for Certain Disaster-Related or Emergency-Related Work Performed in the State," establishes definitions for resilience[2] and vulnerable communities,[3] and establishes incentive programs (i.e., Microgrid and Resilience Grant and Loan Pilot Program).

- **Renewable Energy, Energy Efficiency, and Battery Storage Targets** – Connecticut has a Renewable Portfolio Standard ("RPS") of 40% clean energy (e.g., solar, wind, fuel cells), weatherization target of 80% by 2030, and 1000 MW battery storage target by 2030, including several supportive incentive programs including:

    - **Residential Renewable Energy Solutions** ("RRES") – incentive program that provides residential participants, including affordable housing properties,[4] with 20-year tariffs (i.e., $0.294/kWh – payments for electricity and renewable energy credits), with additional adders for low-income residents and affordable housing properties (i.e., between $0.025-$0.030/kWh) to encourage the deployment of behind the meter renewable energy. A target of no less than 40% of installations and benefits for low-income families, homes located within distressed communities, or affordable housing has been established by the Public Utilities Regulatory Authority ("PURA") for the incentive program.

    - **Shared Clean Energy Facilities** – technology-agnostic clean energy incentive program (i.e., similar to community solar) that provides low-to-moderate income families, including low-income tenants within affordable housing properties, with Subscriber Savings (i.e., 20-year credit of $0.025/kWh) resulting from both the consumption of the Subscriber and the clean energy production of a grid-tied clean energy facility.

    - **Conservation and Loan Management Plan** – various incentive programs for income-eligible energy assessments (e.g., Home Energy Solutions – Income Eligible) and efficient appliances (e.g., weatherization, heat pumps).

    - **Energy Storage Solutions** ("ESS") – incentive program that provides residential participants, including affordable housing properties, upfront incentives (i.e., $200-$400/kWh with a maximum cap of $7,500 per project) for passive dispatch and ongoing performance-based incentives (e.g., $225/kW season years 1 through 5, and $130/kW season years 6 through 10) for active dispatch, to increase resilience of participants and reduce peak demand, and thus reduce ratepayer electricity rates. A target of no less than 40% of installations and benefits for low-income families, homes located within distressed communities, or affordable housing has been established for ESS by PURA for the incentive program.

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[2] "Resilience" means the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from deliberate attacks, accidents or naturally occurring threats or incidents, including, but not limited to, threats or incidents associated with the impacts of climate change.

[3] "Vulnerable communities" means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, low and moderate income communities, environmental justice communities pursuant to section 22a-20a, communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time, populations with increased risk and limited means to adapt to the effects of climate change, or as further defined by the Connecticut Department of Energy and Environmental Protection in consultation with community representatives.

[4] Per proposed decision by the Public Utilities Regulatory Authority in Docket No. 22-08-02 (October 12, 2022)

- **Retrofits for Affordable Housing** – Public Act 21-48 "An Act Establishing an Energy Efficiency Retrofit Grant Program for Affordable Housing," allows Connecticut (i.e., Department of Energy and Environmental Protection ("DEEP")) to receive funds (e.g., from the federal government) to fund the installation of energy efficient upgrades (e.g., weatherization, solar PV, energy storage, electric vehicle charging infrastructure, heat pumps) including the mitigation of health and safety hazards (e.g., gas leaks, mold, vermiculite, and asbestos, lead and radon) for affordable housing.[5]

- **Green Bank** – Public Act 11-80 "An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning for Connecticut's Energy Future," established the nation's first state-level green bank (i.e., Connecticut Green Bank) to receive funds (e.g., from the federal government) to finance the deployment of clean energy[6] and environmental infrastructure.[7]

  The Green Bank, along with its partners, are seeking to advance several projects of relevance to the GRRP in Connecticut, including:

  - **Climate Smart Technology and Home Medical Devices for Affordable Housing Project** – a research and development project funded by the Robert Woods Johnson Foundation and matched by the Green Bank, for a collaboration including Operation Fuel, Yale Center on Climate Change and Health, and the Clean Energy Group. The project is intended to investigate tenant resilience needs and drive investment in climate smart technology (e.g., solar power, battery storage) and stable indoor temperature (e.g., efficient heating and cooling, weatherization). The deployment of such technologies in affordable housing can increase the resilience of tenants that are reliant on home medical devices for their health, allowing medically vulnerable residents to safely shelter in place during a climate emergency.

  - **Home Resiliency Program (Pilot)** – a pilot program in research and development for single-family homeowners (and potentially affordable housing), funded by the Green Bank, including DEEP, Connecticut Insurance Department, and the Connecticut Institute for Resilience and Climate Adaptation ("CIRCA") at the University of Connecticut, with technical assistance from Climate Finance Advisors, member of WSP, to design a home

[5] "Affordable Housing" means housing for which persons and families pay thirty per cent or less of their annual income, where such income is less than or equal to the area median income for the municipality in which such housing is located, as determined by the United States Department of Housing and Urban Development.

[6] "Clean Energy" means solar photovoltaic energy, solar thermal, geothermal energy, wind, ocean thermal energy, wave or tidal energy, fuel cells, landfill gas, hydropower that meets the low-impact standards of the Low-Impact Hydropower Institute, hydrogen production and hydrogen conversion technologies, low emission advanced biomass conversion technologies, alternative fuels, used for electricity generation including ethanol, biodiesel or other fuel produced in Connecticut and derived from agricultural produce, food waste or waste vegetable oil, provided the Commissioner of Energy and Environmental Protection determines that such fuels provide net reductions in greenhouse gas emissions and fossil fuel consumption, usable electricity from combined heat and power systems with waste heat recovery systems, thermal storage systems, other energy resources and emerging technologies which have significant potential for commercialization and which do not involve the combustion of coal, petroleum or petroleum products, municipal solid waste or nuclear fission, financing of energy efficiency projects, projects that seek to deploy electric, electric hybrid, natural gas or alternative fuel vehicles and associated infrastructure, any related storage, distribution, manufacturing technologies or facilities and any Class I renewable energy source, as defined in section 16-1.

[7] "Environmental infrastructure" means structures, facilities, systems, services and improvement projects related to (A) water, (B) waste and recycling, (C) climate adaptation and resiliency, (D) agriculture, (E) land conservation, (F) parks and recreation, and (G) environmental markets, including, but not limited to, carbon offsets and ecosystem services.

resiliency program to drive investment and capital access to incentivize homeowners to make their properties and their communities more resilient to the impacts of climate change.

- **Energy Storage Solutions Technical Assistance for Multifamily Affordable Housing** – the Green Bank has contracted with the Clean Energy Group to analyze use cases for deploying battery storage systems in multifamily affordable housing and to identify opportunities for resiliency through energy storage and/or onsite renewable energy. Through this program, the Clean Energy Group will administer financial and site assessments of 24 facilities across the state.

The Green Bank, working with its partners DEEP, PURA, Department of Housing ("DOH"), and the Connecticut Housing and Finance Authority ("CHFA"), share HUDs goals of the GRRP for the HUD-assisted multifamily portfolio to include reducing energy consumption and carbon emissions, improving indoor air quality for residents, reducing residents' and properties' exposure to climate hazards, and protecting life, livability, and property when disaster strikes. Enabling more investment in such properties will improve the lives of low-income families.

Responses to Specific Information Requested

1. *HUD is seeking input on program design features, energy-saving measures, low emission technology, and resilience design and measures that have proven effective in affordable multifamily buildings. How might this program help prioritize and scale best practices for reducing energy consumption and carbon emissions, improving indoor air quality for residents, and strengthening climate resilience among affordable multifamily buildings? How can these measures and practices be deployed in a way that preserves affordability of our properties? Eligible uses for project funding and/or financing include:*

    a. *Improve energy and/or water efficiency*
    b. *Enhance indoor air quality and/or sustainability*
    c. *Implement the use of zero-emission electricity generation, low-emission building materials or processes, and/or energy storage, or building electrification strategies*
    d. *Address climate resilience.*

    Response
    There are over 500 affordable housing properties funded (including jointly funded)[8] by HUD with nearly 40,000 units in over 80 of Connecticut's 169 cities and towns. GRRP, in conjunction with Connecticut's public policies and incentive programs, as well as the various tax credits and rebates within the IRA, has the potential to dramatically improve the lives of tenants residing within such housing by reducing energy costs, reducing GHG emissions, increasing climate resilience, and improving public health outcomes through the deployment of climate smart technologies.

    For Connecticut, given currently funded incentive programs, resources from the GRRP would be best served supporting the enhancement of indoor air quality and improving the health and safety of buildings. Investment in HUD administered (or co-administered) properties would be best served being directed towards alleviating existing health and safety issues on properties (e.g., gas leaks,

[8] Co-funded with properties involving Connecticut Department of Housing ("DOH"), Connecticut Housing and Finance Authority ("CHFA"), Department of Mental Health and Addiction Services ("DMHAS"), and US Department of Agriculture ("USDA")

mold, vermiculite, and asbestos, lead and radon), including increasing safety against flooding (e.g., inside the property, including elevation of service equipment, sump pumps, French drainage systems, and outside the property, including rain barrels/planters, rain gardens, and planting native trees). The Green Bank would suggest that ensuring affordable housing has a reliable source of heat (as well as electricity) is equally important to ensuring tenant wellbeing.

Ensuring the affordability of HUD properties, while improving the livelihoods of those low-income tenants that reside in such properties, is an imperative. The investment in the improvement of such properties will modernize access and ensure affordability for low-income tenants as long as HUD allows for such investments to not detract from the economic value created for tenants. For example, by lowering energy costs through the installation of clean energy, tenants residing within such HUD properties should not have their housing allowance or utility subsidy offset by the reduction in energy costs as a result of such investment and improvement of the property.

2. *This program offers owners of HUD-assisted multifamily properties an opportunity to plan comprehensively around energy efficiency and climate resilience. Often, these goals can be interrelated. Materials and technologies that enhance a building's energy efficiency can also make the building more durable and resilient to threats posed by extreme weather events. It is also possible that some energy efficiency and climate resilience improvements may be in tension. HUD would like recommendations for designing the program to meet energy and emissions reduction goals as well as climate resilience. HUD seeks information on how to balance multiple goals (i.e., energy efficiency, decarbonization, and climate resilience). In addition, given the various eligible uses of funds, cost-effectiveness will vary greatly across projects. How might HUD factor in cost-effectiveness when evaluating applications for energy- and/or resilience related projects?*

Response

GRRP should be designed to complement, not duplicate, existing programs operated by states and local governments, which have their own varying public policies and incentives to encourage investment in low-income affordable housing properties. HUD should leave the prioritization of funding to balance multiple goals (i.e., energy efficiency, decarbonization, and climate resilience) to applicants, taking into consideration priorities from state and local governments balancing their own public policies and incentive resources. Technical assistance to support the development of plans (e.g., climate smart technologies) for HUD-assisted properties should always be provided within its programs (e.g., 10% of funds for a project can be used for technical assistance).[9]

If HUD funding can unlock or mobilize additional public (e.g., from state and local government) and/or private investment, then funding from the IRA will achieve greater impact. Consideration should be given to projects that have additional funding matches. For example, a project may seek HUD funding for health and safety improvements specifically, because it already has funding for energy efficiency and climate resilience from other sources (e.g., state and local incentives, federal tax credits). HUD should allow these other sources of funding as a match within the project. This will enable the GRRP to leverage non-federal resources to increase investment in HUD-assisted properties, expanding the impact this program can have to improve people's lives.

Cost-effectiveness tools are not well-developed for use in this space, particularly when looking at chronic impacts of climate change as opposed to catastrophic events. HUD should not make cost-

[9] An example is the Resilient Power Project Technical Assistance Fund ("TAF") grants provided through the Clean Energy Group – https://www.cleanegroup.org/ceg-projects/resilient-power-project/technical-assistance-fund/.

effectiveness evaluation a barrier to deploying measures that address the impacts of chronic flooding and heat impacts. Beyond this, it will be difficult for HUD to evaluate applications requesting funding for different measures (e.g., energy saved or increase in climate resilience per $1 of HUD investment). The Green Bank recommends considering alternative metrics, such as assessing programs based on the number of people's lives positively impacted by such investments. This would focus cost-effectiveness on investment per person residing in a HUD-assisted property (e.g., $ of investment per tenant), including match from other sources.

Collecting appropriate data to determine cost-effectiveness will be important to set the stage for future programming. The GRRP could be looked at as a pilot program seeking to understand the landscape of green and resilient retrofit investments with a focus on identifying key impact metrics to discern how future investment could maximize the improvement of people's lives who reside in HUD-assisted properties.

The Green Bank has found that investment is the key variable in delivering societal impact. Increasing and accelerating public and private investment in commercial technology deployment leads to economic development, energy, environmental, and equity benefits (see Attachment A – Societal Impact Report).

3. *States, localities, and utilities administer programs aimed at delivering energy efficiency and electrification to affordable multifamily properties. In addition, the Inflation Reduction Act makes significant funding available for home energy rebates for low- and moderate-income households through the U.S. Department of Energy and expands the renewable energy Investment Tax Credit. How might HUD encourage or require applicants to leverage other funding for projects-- such as owner equity, other federal, state, local, and/or utility grants, loans, rebates, tax credits, and incentives?*

Response

As detailed in our response to Question 2, HUD-assisted property owners should seek to leverage HUD-funding through the GRRP by mobilizing public and private investment from non-federal sources of funding as well, including support for direct payment of appropriate tax credits. In doing so, it will achieve greater impact and improve more people's lives. For example, HUD policies should not prevent property owners or tenants from pursuing incentives or programs that increase their energy efficiency or deploy clean energy generation provided by state and local governments because they won't be able to receive and financially benefit from such incentives (see Attachment B – HUD Treatment of Community Solar Credits on Tenant Utility Bills and Attachment C – Treatment of Solar Virtual Net Energy Metering Credits on Tenant Utility Bills). The energy bill reductions or revenue received from these programs should not lead to reductions in the tenants' housing allowance or utility subsidy. Standardizing or creating a HUD-wide policy of this nature across the country is an important baseline to establish.

If HUD wants to be effective in helping tenants residing within such affordable housing properties, then it needs to work more closely with state and local government to ensure that more investment is being directed to such properties, while at the same time improving the quality of life of its tenants. HUD's state and regional representatives should assess the benefits of collaboration with state and local government to identify existing programs that HUD could complement to increase and accelerate investment in the modernization of its properties, especially when it comes to energy, climate change, and health and safety, which will improve people's lives.

4. *HUD seeks to design this program to enable deep retrofits of multifamily properties – retrofits that would likely not be possible without this funding. Certain markets are more primed to deploy deep and resilient retrofits in the multifamily sector, while others may lack the state and local infrastructure and workforce for delivering retrofits in this sector. While HUD seeks to maximize impact, how can HUD best ensure that funding is distributed equitably?*

Response

The Green Bank recommends that HUD prioritize providing funding where it can have the greatest impact through complementing existing state and/or local funding opportunities. Pursuing this course of action will ensure that the greatest number of lives improved through GRRP.

For example, in Connecticut, the Climate Smart Technology and Home Medical Devices for Affordable Housing research and development project noted above, will target affordable housing properties located in DOE-determined disadvantaged communities. This project includes three (3) parts:

- **Understand Needs** – social science research by Operation Fuel and Yale University to engage 75 to 150 tenants with existing medical conditions requiring home medical devices residing within no less than fifteen (15) low-income affordable housing properties in three (3) DOE-determined disadvantaged communities;

- **Assess Opportunity** – technical assistance by the Clean Energy Group ascertaining the technical and economic potential of no less than fifteen (15) low-income affordable housing properties located in DOE-determined disadvantaged communities for the deployment of climate smart technology; and

- **Enable Financing** – demonstrate the ability to weave together local, state, and federal incentives with financing (i.e., Connecticut Green Bank), with an eye towards public-private partnerships (e.g., healthcare and insurance industries) to provide the necessary capital for projects.

5. *HUD's ability to achieve its goal of benchmarking energy and water use for the majority of HUD-assisted multifamily portfolio rests on the availability and accessibility of whole-building aggregate energy data. What role can HUD play to support greater access to this utility data? What opportunities exist for HUD to engage utilities and/or public utility commissions to make this data readily available to our multifamily building owners? What incentives, financial support, and/or technical support would encourage owners to participate and get their properties benchmarked?*

Response

HUD could communicate to electric, natural gas, and water distribution companies that it is the policy of the agency to provide access to consumption data to state and local officials for the purposes of conducting such benchmarking to identify opportunities for investment and deployment of climate smart technologies.

In Connecticut, PURA is currently investigating the business case for statewide deployment of Advanced Metering Infrastructure ("AMI"). As part of this investigation, PURA is working to ensure that the roll out of AMI provides more granular data directly to utility customers. HUD could work

directly with these customers in states with AMI and customer data portals to help aggregate customer data within affordable housing. HUD could also directly participate in AMI regulatory proceedings, such as Connecticut's, to make recommendations regarding data access to help develop the necessary tools, such as disclosure forms, to allow for building owners to receive their tenants' AMI data.

If HUD wants to receive energy or water usage data directly, absent any specific enabling legislation, the alternative is to work directly with utilities to access information that will benefit low-income families residing in affordable housing. Such information would then be used to enable developers an opportunity to advance projects at such properties. If that process proves unsuccessful, HUD may need to petition PUCs to open an investigation into data access of the electric, natural gas, and water distribution companies.

HUD providing technical assistance to benchmark all of its facilities, in terms of energy, water, resilience, and health and safety, would be a substantial and important first step to ascertaining the opportunities available for investment in property improvements to improve people's lives. HUD may want to look to states or cities with successful, existing benchmarking ordinances for data reporting best practices such as using a standardized data reporting process, and providing building owners with technical support. ACEEE[10] and the Better Buildings Energy Data Accelerator[11] provide relevant examples.

6. *What equity considerations should HUD consider when implementing property retrofits and benchmarking? HUD-assisted properties exist nationwide, and they disproportionately serve residents who are otherwise underserved by housing markets, including people with disabilities, older adults, and people from communities of color.*

Response

For the deployment of a new Climate Resilience Fund in Connecticut, the state has defined metrics to determine vulnerable communities with vulnerable populations. Pursuant to CGS Sec. 16-243y(7), "vulnerable communities" means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to:

- Low- and moderate-income communities,
- Environmental justice communities pursuant to section 22a-20a,
- Communities eligible for community reinvestment pursuant to section 36a-30 and the
- Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time,
- Populations with increased risk and limited means to adapt to the effects of climate change, including:
    - Communities of color
    - Children and seniors
    - Low-income communities
    - People with disabilities
    - Pregnant people
    - People with Limited English Proficiency (LEP)
    - Other historically disadvantaged people
    - People impacted by the social determinants of health

[10] Benchmarking Initiatives in the Multifamily Market | ACEEE
[11] Utility Best Practices Case Study - Eversource.pdf (energy.gov)

- Populations identified by the American Public Health Association

HUD could facilitate the rapid disbursement of funds and subsequent realization of benefits if they adopted a definition of vulnerable communities that align with existing state definitions.

Alternatively, funds provided by HUD through the GRRP could be targeted at affordable housing properties with a significant number of units (i.e., to maximize investment per tenant), and those located in disadvantaged communities. HUD should evaluate how definitions and metrics used by the agency align with those used by other federal agencies who have also initiated programs for affordable housing, namely the Federal Emergency Management Agency ("FEMA") and U.S. Department of Energy ("DOE") and its Justice 40 Initiative. Under the current guidelines, it is possible communities would qualify for preference for funding through Justice40 under one agency, but not another depending on the metric the agencies use.

7. *This will be the first HUD program to target multifamily properties nationwide with property-level resilience interventions at this scale. How can and should HUD evaluate resilience needs and the effectiveness of these interventions, considering the variety of natural hazards and that the effectiveness of many resilience strategies are truly tested only when a disaster event strikes? How should HUD balance geographic disparities in the needs for resilience interventions (i.e., more frequent in coastal areas) and the availability of other funds, from HUD and other agencies, for recovering from disasters?*

Response

The Green Bank recommends that HUD prioritize addressing chronic impacts of climate change rather than focusing on resilience in the face of catastrophic events as a way to balance against other sources of federal funding. While catastrophic events may be less evenly distributed across the country, chronic climate impacts (such as stormwater flooding and heat impacts) are shared more broadly across regions. Furthermore, measures to address these more chronic impacts of a changed climate are more affordable to address and have shared benefits across energy and resilience for heat and resilience and indoor air quality for chronic flooding.

The Green Bank would recommend that HUD consider the following engagements to further its understanding of how the GRRP can deliver maximum benefit:

- **Engage National Association of Insurance Commissioners** – HUD should engage the state insurance regulators that oversee insurance companies, and leverage the National Association of Insurance Commissioners ("NAIC") which serves all state insurance regulators, in a conversation about the potential climate change impacts facing its affordable housing. Given the exposure to natural hazards varies by geographic location and has a disparate impact on local communities, such engagement will elucidate localized opportunities for public-private partnerships, including with the healthcare and insurance industries, that will enable greater investment in decarbonization and climate resilience.

- **Engage Insurance Institute for Business and Home Safety** – as the nonprofit science organization supported by property insurers, reinsurers, and others, IBHS's building safety research leads to real world solutions that creates more resilient communities. For example, their FORTIFIED rating and labeling system, including "FORTIFIED Multifamily," establishes voluntary construction standards and reroofing approaches to empower

developers, owners, and property managers to take it upon themselves to make their properties more resilient.

- **Engage National Association of State Energy Offices** – as the association of state energy offices, HUD's engagement of NASEO could identify opportunities for how state and local governments could leverage federal resources to increase investment in the deployment of climate smart technologies.

Improving resilience requires increasing and accelerating public and private investment in affordable housing properties to better prepare for, respond to, and recover from natural hazards induced by climate change. For example, through the use of American Recovery and Reinvestment Act funding, the Green Bank was able to turn $8.3 million of federal funds, to leverage $16.5 million of state funds and $158.1 million of private investment, to enable greater and faster deployment of climate smart technologies for single family homeowners (see Attachment D – The Impact of Federal Funds). The more HUD can enable GRRP to increase public and private partnerships to invest in its affordable housing properties, the more people's lives will be positively impacted.

The Green Bank, and its state partners (e.g., DEEP, PURA, DOH, CHFA, Insurance), appreciate HUD's efforts to solicit public comment on the pending GRRP request for proposals ("RFP"). We look forward to working with our public-private partners to submit an application for consideration into a future GRRP RFP.

Sincerely,

Bryan Garcia
Bryan Garcia
President and CEO

Sara Harari
Sara Harari
Associate Director of Innovation and Senior Advisor to the President and CEO

About the Connecticut Green Bank

As the nation's first state-level green bank, the Connecticut Green Bank leverages the limited public resources it receives to attract multiples of private investment to scale up clean energy deployment. Since its inception, the Green Bank has mobilized $2.26 billion of investment into Connecticut's clean energy economy at a 7 to 1 leverage ratio of private to public funds, supported the creation of 27,720 direct, indirect and induced jobs, reduced the energy burden on over 66,500 families and businesses, deployed nearly 510 MW of clean renewable energy, helped avoid 10.4 million tons of CO_2 emissions over the life of the projects, and generated $113.6 million in individual income, corporate, and sales tax revenues to the State of Connecticut.

Attachments

Attachment A – Societal Impact Report
Attachment B – Treatment of Community Solar Credits on Tenant Utility Bills
Attachment C – Treatment of Solar Virtual Net Energy Metering Credits on Tenant Utility Bills
Attachment D – The Impact of Federal Funds

Appendix A – Societal Impact Report

CONNECTICUT GREEN BANK

Societal Impact Report

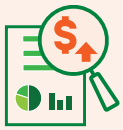
FY12 FY22

Since the Connecticut Green Bank's inception through the bipartisan legislation in July 2011, we have mobilized more than **$2.26 billion of investment** into the State's green economy. To do this, we used **$322.4 million** in Green Bank dollars to attract $1.95 billion in private investment, a leverage ratio of **$7.00 for every $1**. The impact of our deployment of renewable energy and energy efficiency to families, businesses, and our communities is shown in terms of economic development, environmental protection, equity, and energy (data from FY 2012 through FY 2022).

ECONOMIC DEVELOPMENT

JOBS The Green Bank has supported the creation of more than **26,720** direct, indirect, and induced job-years.

TAX REVENUES
The Green Bank's activities have helped generate an estimated **$113.6** million in state tax revenues.



$55.3 million individual income tax

$29.2 million corporate taxes

$29.1 million sales taxes

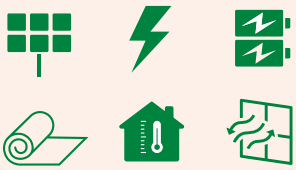
ENERGY

ENERGY BURDEN
The Green Bank has reduced the energy costs on families, businesses, and our communities.

60,000+
families

6,500+
businesses

DEPLOYMENT
The Green Bank has accelerated the growth of renewable energy to more than **509 MW** and lifetime savings of over **65.6 million MMBTUs** through energy efficiency projects.



ENVIRONMENTAL PROTECTION

POLLUTION The Green Bank has helped reduce air emissions that cause climate change and worsen public health, including **9.6** million pounds of SOx and **11.1** million pounds of NOx lifetime.

10.4 MILLION tons of CO_2 : EQUALS

156 MILLION
tree seedlings grown for 10 years

OR

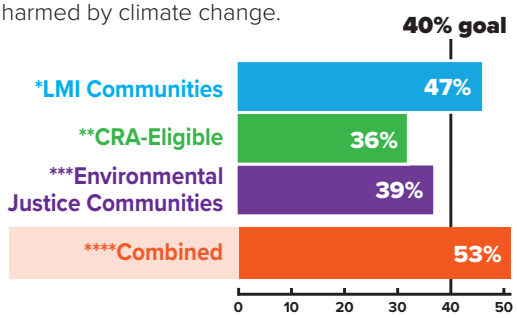
2.1 MILLION
passenger vehicles driven for one year

PUBLIC HEALTH The Green Bank has improved the lives of families, helping them avoid sick days, hospital visits, and even death.

$317.1 – $717.2 million of lifetime public health value created

EQUITY

INVESTING in vulnerable communities, The Green Bank has set **goals** to reach **40% investment** in communities that may be disproportionately harmed by climate change.



*LMI Communities – census tracts where households are at or below 100% Area Median Income.

**Community Reinvestment Act (CRA) Eligible – households at or below 80% of Area Median Income and all projects in programs designed to assist LMI customers.

***Environmental Justice Community means a municipality that has been designated as distressed by Connecticut Department of Economic and Community Development (DECD) or a census block group for which 30% or more of the population have an income below 200% of the federal poverty level.

****Combined Vulnerable Communities include LMI, CRA and EJC.

Learn more by visiting ctgreenbank.com/strategy-impact/impact

Winner of the 2017 Harvard Kennedy School Ash Center Award for Innovation in American Government, the Connecticut Green Bank is the nation's first green bank.

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Sources: Connecticut Green Bank Comprehensive Annual Financial Reports

Appendix B – Treatment of Community Solar Credits on Tenant Utility Bills

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

WASHINGTON, DC 20410-8000

OFFICE OF HOUSING

MEMORANDUM FOR: Multifamily Regional Directors
Multifamily Asset Management Division Directors
Multifamily Owners and Management Agents
Section 8 Contract Administrators

FROM: Tobias Halliday, Director, Office of Asset Management and Portfolio Oversight, HTG

SUBJECT: Treatment of Community Solar Credits on Tenant Utility Bills

Background

A growing number of states offer community solar programs. These programs give families who live in properties, including HUD-subsidized properties and private market rental units, access to renewable energy, even though the property itself may not be suitable for solar panels. Community solar arrays have multiple subscribers who receive benefits on utility bills that are directly attributable to the solar project's energy generation. There are no upfront costs to subscribers, and they can receive benefits—typically in the form of an on-electricity bill credit. In the case there are ongoing costs or fees for low-income participants, it is typically mandated that any costs will not be more than 50% of the value participants get from their system.

Purpose and Applicability

The purpose of this notice is to provide guidance to HUD Multifamily Housing (MFH) field staff, owners, and management agents on the treatment of on-bill virtual net energy metering credits that commonly result from a resident's participation in a community solar program. This only applies in the case of tenant-paid electricity and where the solar credit appears as a negative amount on the electricity bill. This guidance does not apply to residents of master-metered multifamily buildings. In addition, this guidance does not change existing rules for utility allowance baseline analyses or income calculations; rather, it provides guidance for how to treat community solar credits within existing rules.

This notice applies to the following Office of Multifamily Housing Programs:

1. Project-based Section 8
    a. New construction
    b. State Agency Financed
    c. Substantial Rehabilitation
    d. Section 202/8
    e. Rural Housing Services (RHS) Section 515/8
    f. Loan Management Set-Aside (LMSA)

    g. Property Disposition Set-Aside (PDSA)
    h. Rental Assistance Demonstration Project Based Rental Assistance (RAD/PBRA)
2. Section 202/162 Project Assistance Contracts (PAC)
3. Section 202 Project Rental Assistance Contracts (PRAC)
4. Section 202 Senior Preservation Rental Assistance Contracts (SPRAC)
5. Section 811 PRACs
6. Section 811 Project Rental Assistance (PRA)
7. Section 236 Subsidized Mortgages

Determination of Treatment of Solar Credits in Utility Allowance and Annual Income Calculation

If these characteristics outlined above apply to residents in a covered program, the following two-step process may be used to determine whether the community solar credits should be included/excluded from the utility allowance baseline analysis or included/excluded from a family's annual income for purposes of rent calculation and/or eligibility determination.

Step One: Determine if Community Solar Credits Affect Utility Allowance Calculation

Step One is a test for determining the community solar credit's relationship to the utility allowance calculation. To understand the effect of a community solar credit on a unit's utility allowance calculation, you will need a copy of the tenant's electricity bill (this can be accessed by the utility company if it is not already available). Per this guidance, you will not need any additional information as the solar credit will appear as a negative amount on the tenant's electricity bill.

If the credit reduces the cost of energy consumption by lowering actual utility rates, then the owner ***is*** required to submit a new baseline analysis in accordance with Housing Notice 2015-04, regardless of when the last analysis was submitted to HUD/Contract Administrator for approval.

Factors for determining whether the credit is tied to the cost of consumption:

1. Is the credit a third-party payment (e.g., not from the electricity provider) on behalf of the tenant rather than a reduction in the cost of utilities?
    a. Yes →Credit is not considered to reduce the cost of energy consumption as the cost for the utility provider to provide the consumed energy does not change. The owner ***is not*** required to submit a new utility allowance baseline analysis (see example bills with solar credits *not* tied to consumption in the Appendix).
    b. No →Credit may be tied to the cost of consumption. Proceed to question #2 below.

2. Does the credit amount fluctuate every month and/or does the electric bill show a lowered utility rate per kilowatt-hour?
    a. Yes →Credit is tied to the cost of utility consumption. The owner ***is*** required to submit a new utility allowance baseline analysis.

b. No →Credit is not tied to the cost of utility consumption. The owner ***is not*** required to submit a new utility allowance baseline analysis.

Step Two: Determine if Community Solar Credits Should be Considered Annual Income for Rent Calculation or Determining Eligibility for HUD-assisted Multifamily Programs

The second step is to determine if the credits fall within HUD's definition of annual income.[1] In all foreseeable instances as of the date of this memo, if the solar credit is tied to the cost of consumption (i.e., utility allowance is affected) (addressed in Step One), then credit will not count towards income.

If a community solar benefit appears on a household's electricity bill as an amount credited from the total cost of the bill, HUD has determined that the credit should be treated as a *discount or coupon* to achieve a lower energy bill (rather than a cash payment or cash-equivalent payment being made available to a resident). In this case, the credit ***will not*** be counted towards income as discounts on items purchased by a tenant are not viewed as "annual income" to the family. Generally, income is not generated when a family purchases something at a cheaper rate than it otherwise would.

Note that if the credits are found to be third-party payments based on Step One, there may be instances when the credits are not mere discounts and must be treated as income. For instance, a recurring monthly utility payment made on behalf of the family by an individual outside of the household is not considered a discount but is considered annual income to the family.

Further Information

If you are evaluating the treatment of solar credits outside the program framework outlined above and require a state specific determination and/or have general questions about this guidance, please email Lauren Ross, Senior Advisor for Housing and Sustainability at Lauren.Ross@hud.gov.

[1] HUD definition of annual income 24 CFR 5.609. 5.609(a) says: "(a) Annual income means all amounts, monetary or not, which: (1) Go to, or on behalf of, the family head or spouse (even if temporarily absent) or to any other family member; or (2) Are anticipated to be received from a source outside the family during the 12-month period following admission or annual reexamination effective date; and (3) Which are not specifically excluded in paragraph (c) of this section. (4) Annual income also means amounts derived (during the 12-month period) from assets to which any member of the family has access."

Appendix

Example 1: Utility Bill with Community Solar Credits *not* tied to Consumption

PEPCO CUSTOMER
Account number: [redacted]

Your electric bill for the period
April 4, 2015 to May 5, 2015

Details of your Electric Charges

Residential-R - service number 0012 3456 7890 7001 6762 64
Electricity you used this period

Meter Number Energy Type	Current Reading	Previous Reading	Difference	Multiplier	Total Use
1ND344415274 Use (kWh)	May 5 057043 (actual)	Apr 4 055628 (actual)	1415	1	1415

Your next meter reading is scheduled for June 3, 2015

Delivery Charges: These charges reflect the cost of bringing electricity to you. Current charges for 32 days, **winter rates in effect.**

Type of charge	How we calculate this charge	Amount($)
Distribution Services:		
Customer Charge		13.00
Energy Charge	First 400 kWh X $0.0038440 per kWh	1.54
Energy Charge	Last 1015 kWh X $0.0113740 per kWh	11.55
Residential Aid Discount Surcharge	1415 kWh X $0.0002940 per kWh	0.42
Administrative Credit	1415 kWh X $0.0001855- per kWh	0.26–
CNM Credit: CREFA	150- kWh X $0.0809700 per kWh	12.15-
CNM Credit: CREFB	100- kWh X $0.0809700 per kWh	8.10-
Subtotal (Set by DC PSC)		**6.00**
Energy Assistance Trust Fund	1415 kWh X $0.0000607 per kWh	0.09
Sustain Energy Trust Fund	1415 kWh X $0.0015000 per kWh	2.12
Public Space Occupancy Surcharge	1415 kWh X $0.0020400 per kWh	2.89
Delivery Tax	1415 kWh X $0.0070000 per kWh	9.91
Subtotal (Not set by DC PSC)		**15.01**
Total Electric Delivery Charges		**21.01**

Electric Distribution Summary - Pepco

Balance from your last bill	**$60.02**
Payment Apr 30	$60.02–
Total Payments	**$60.02–**
Electric Charges (Residential-R)	$21.01
New electric charges	**$21.01**
Total amount due by Jun 1, 2015	**$21.01**

Amount *not* to be included in utility allowance baseline analysis

Page 2 of 3

*In this sample bill, the customer used 1415 kWh that month and they are being fully charged for that usage. The two lines of community net metering (CNM) credits are for -100 kWh and -150 kWh that carry their own kWh charge. Those are not at all connected to the 1415 kWh usage/cost.

Example 2: Utility Bill with Community Solar Credits *not* tied to Consumption

Amount *not* to be included in utility allowance baseline analysis

Page 2 of 3 Issued **11/10/21** Account [redacted]

Total Amount Due by 12/2/21 $18.05

For Questions, Support, and Outages visit ComEd.com

English	**1.800.EDISON1 (1.800.334.7661)**
Español	**1.800.95.LUCES (1.800.955.8237)**
Hearing/Speech Impaired	**1.800.572.5789 (TTY)**
Federal Video Relay Services (VRS)	**Fedvrs.us/session/new**

METER INFORMATION

Read Dates	Meter Number	Load Type	Reading Type	Previous	Present	Difference	Multiplier	Usage
10/12-11/10	271741330	General Service	Total kWh	7979 **Actual**	8061 **Actual**	82	x 1	82

RENEWABLE COMMUNITY SUPPLY DETAILS

Generation Period	Project Name	Phone Number	Generation kWh	Rate	Total
9/29 - 11/1	Bunker Hill 2	866.826.1997	58.6648	-0.05924	-$3.48

CHARGE DETAILS

Residential - Multiple 10/12/21 - 11/10/21 (29 Days)

SUPPLY **$2.49**

Electricity Supply Charge	82 kWh X 0.06424	$5.27
Transmission Services Charge	82 kWh X 0.01353	$1.11
Purchased Electricity Adjustment		-$0.41
Renewable Community Supply Credit		-$3.48

DELIVERY - ComEd **$13.87**

Customer Charge		$7.65
Standard Metering Charge		$3.70
Distribution Facilities Charge	82 kWh X 0.02948	$2.42
IL Electricity Distribution Charge	82 kWh X 0.00123	$0.10

TAXES & FEES **$1.69**

Environmental Cost Recovery Adj	82 kWh X 0.00022	$0.02
Renewable Portfolio Standard	82 kWh X 0.00189	$0.15
Zero Emission Standard	82 kWh X 0.00195	$0.16
Energy Efficiency Programs	82 kWh X 0.00188	$0.15
Franchise Cost		$0.43
State Tax		$0.27
Municipal Tax		$0.51

Service Period Total **$18.05**

MISCELLANEOUS **$0.00**

Community Supply Generation Credit -$3.48

Thank you for your payment of $18.00 on October 15, 2021

Total Amount Due **$18.05**

UPDATES

ComEd

- PRICE TO COMPARE: The ComEd electric supply price to compare is 7.777 cents per kWh. This price does not include a monthly purchased electricity adjustment factor that may range between +$0.005 and -$0.005 per kWh. For more information and supplier offers visit https://www.pluginillinois.org/fixedrate.aspx. For more information on ComEd bill line items go to ComEd.com/UnderstandBill.
- WAYS TO PAY: Looking for ways to pay your bill? Visit ComEd.com/PAY
- STOP ENERGY SCAMS: Scammers may threaten to disconnect service in exchange for immediate payment or personal information. We will never demand payment using prepaid cash cards, third-party banking apps, or cryptocurrency such as Bitcoin. Learn more: ComEd.com/ScamAlert.

(continued on next page)

A VARIETY OF METHODS TO PAY YOUR BILL

Visit ComEd.com/PAY for more information including applicable fees for some transactions.

Online **Mobile App** **Phone** **In-Person**

Attachment C – Treatment of Solar Virtual Net Energy Metering Credits on Tenant Utility Bills

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-8000

OFFICE OF HOUSING

JUL - 8 2019

MEMORANDUM FOR: Multifamily West Regional Center Director, Asset Management Division Directors, and Operations Officer
All Contract Administrators for California properties
All Owner/Agents of Multifamily assisted housing properties located in California

FROM: Brian A. Murray, Acting Director, Office of Asset Management and Portfolio Oversight, HTG

SUBJECT: Treatment of Solar Virtual Net Energy Metering Credits on Tenant Utility Bills

Purpose

The purpose of this memorandum is to provide guidance to HUD Multifamily Housing field staff and owners and management agents on the treatment of on-bill virtual net energy metering (VNEM) credits that may be received by tenants in HUD multifamily housing as a result of an owner's participation in California's Solar on Multifamily Affordable Housing (SOMAH) program.

Background

In 2015, the California legislature passed legislation (Assembly Bill 693) establishing a new incentive program making $100 million a year over ten years available to incentivize the installation of solar energy systems benefitting affordable multifamily housing. The statute includes a requirement that tenants receive a direct economic benefit from these new systems, to be delivered in the form of VNEM credits on their utility bills.

Applicability

This memorandum applies to the following programs:

1. Project-based Section 8
    a. New Construction
    b. State Agency Financed
    c. Substantial Rehabilitation
    d. Section 202/8
    e. Rural Housing Services (RHS) Section 515/8
    f. Loan Management Set-Aside (LMSA)
    g. Property Disposition Set-Aside (PDSA)
    h. Rental Assistance Demonstration Project Based Rental Assistance (RAD/PBRA)

2. Section 202/162 Project Assistance Contracts (PAC)
3. Section 202 Project Rental Assistance Contracts (PRAC)
4. Section 202 Senior Preservation Rental Assistance Contracts (SPRAC)
5. Section 811 PRACs
6. Section 811 Project Rental Assistance (PRA)
7. Section 236 Subsidized Mortgages

VNEM Credits are Excluded from Annual Income

Office of Multifamily Housing, with the assistance of the HUD Office of General Counsel, has determined that VNEM credits allocated to tenants under the SOMAH program are an incidental benefit and must not be included as annual income to the household. While these credits appear on individual tenants' utility bills[1], VNEM credits do not meet the definition of tenant income as they result from the property owners' participation in the SOMAH program and have no relationship to tenants' electricity consumption. Moreover, these benefits stay with the unit and do not follow specific tenants when they terminate their residence in a participating property.

VNEM Credits are Excluded when Calculating Utility Allowances

VNEM credits are issued by the electric utility company to participating properties according to the amount and time of day of the electricity generated by the solar system and exported to the grid. Credits are then allocated in a two-step process: 1) between owner paid utilities, i.e. common areas, and tenant paid utilities, i.e. units; and 2) tenant credits are then distributed between tenant units. Allocations are made in accordance with a formula proposed by the solar system owner (i.e. the property owner) and approved by the utility company. For the purpose of this memorandum, "units" refer to all the physical spaces for which tenants pay electricity bills as contrasted with common areas, for which the owner is responsible for electric bills.

Because there is no connection between the tenant's actual electricity consumption and these credits, owners and management agents must disregard the solar credit when calculating utility allowances.

Owners and management agents should address all property-specific questions to the assigned contract administrator or Multifamily Account Executive. General policy questions may be sent to Annecia Durr, Subsidy Oversight Branch Chief at Annecia.durr@hud.gov.

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[1] HUD-assisted properties that are master-metered for electricity are not eligible to participate in the SOMAH program.

Attachment D – The Impact of Federal Funds

The Impact of Federal Funds in Connecticut

Through our partnership with the Department of Energy & Environmental Protection, Connecticut Green Bank deployed $8.25 million of American Recovery and Reinvestment Act of 2009 (ARRA) funds to create more than $176.4 million of investments into residential clean energy projects. (All data as of 12-31-2021)

CONNECTICUT GREEN BANK

Environment

ARRA funds helped to avoid **596,382 tons of CO_2**, which is equal to:

8.9 million tree seedlings grown for 10 years

removing 117,663 passenger cars from the road for one year

Economic Development

The Green Bank turned $8.25 million of federal funds

$8.25 million → $174.6 million

into **$174.6 million in investments**

$16.5M Green Bank investment

$158.1M private investment

$8.25M ARRA Funds

The Green Bank supported the creation of **2,176 job-years of employment** through the use of ARRA funds.

Equity

38% of **investments**

53% of **projects**

were made in **vulnerable communities**

$38.8–87.8M of lifetime public health value created

9,434 families supported

The Green Bank targets 40% of investment and benefits into vulnerable communities

Energy

The use of ARRA funds supported

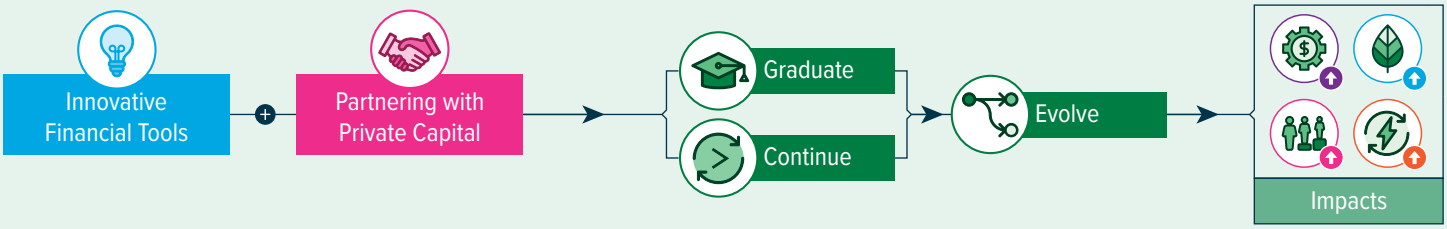
- Deployment of over **24 megawatts** of **clean energy**
- **Lifetime savings of over 3.4 million MMBTUs** through energy efficiency projects, including:
  - Solar panel installation
  - Insulation upgrades
  - Heating and cooling system upgrades

$138M in lifetime energy savings generated

Financing Programs with Federal Funds

CONNECTICUT GREEN BANK

The Green Bank's ARRA funded programs combined innovative financial tools and partnering with private capital to create programs that **promote clean energy, economic growth, a healthier environment, and greater equity** in Connecticut.



Program models, proved successful through the deployment of ARRA funds, evolved to focus on additional markets and larger investment beyond the Green Bank.

CT SOLAR LEASE

Allowed homeowners to access the benefits of solar through a lease option.

- Leveraged $3.5M in ARRA funds as a **lease loss reserve** and $7.1M in Green Bank Subordinated Debt and Sponsor Equity.
- Raised $15.0M of **tax equity investment** and $16.9 million of senior debt through a **syndicate of local lenders**.

The success of this model led to the creation of **"Solar For All"**: a program based on the model that focused on providing residential solar to low-to-moderate income (LMI) families and communities of color — helping Connecticut achieve 41% deployment in LMI communities

CT SOLAR LOAN

Enabled homeowners of varying financial means to own their systems at affordable rates without a lien.

- Used $517,000 in ARRA funds for a **loan loss reserve (LLR)** to allow for the creation of the **first-ever crowd- sourced portfolio of solar loans**.
- Partnered with Sungage Financial and The Reinvestment Fund to generate $8.3M in lifetime savings.

After this model proved successful, the program expanded to include new partners and a $100 million pool of capital, without any resources from the Green Bank.

A **loan loss reserve** is a pool of money set aside to cover a prespecified amount of loan losses, providing partial risk coverage to lenders.

SMART-E LOAN

Offers flexible financing for upgrades to home energy performance.

- ARRA funds used as **LLR and interest rate buydowns (IRB)** to offer homeowners low-interest financing to improve their home's energy performance.
- Provided in partnership with 13 local community banks and credit unions, 500+ contractors, and 5,923 families for $108.7 million in total investment.

Originally focused on clean energy, this program is **expanding to support environmental infrastructure.**

The program is transitioning from ARRA supported LLR to LLR on the Green Bank's balance sheet using IRBs from ARRA funds.

An **interest rate buydown** is when capital is deployed to pay a portion of the interest on borrowers' loans to decrease their costs.

LOW INCOME MULTI-FAMILY ENERGY (LIME) LOAN

Unsecured low interest loans serving properties where at least 60% of units serve renters at 80% or lower of Area Median Income.

- ARRA funds used as LLR and **projected energy savings are used to cover the debt service of the loan.**
- Offered through a partnership with Capital For Change (C4C), a community development financial institution (CDFI) that provides financial **products and services that support an inclusive and sustainable economy**.

Using $300,000 in ARRA funds as LLR, LIME projects have a combined lifetime energy cost savings of over $117.6M.