

Enhancing the Greenhouse Gas Reduction Fund

A brief for funders and impact investors on funding and investment opportunities



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EXECUTIVE SUMMARY

In 2022, the Inflation Reduction Act (IRA) authorized the Environmental Protection Agency (EPA) to establish the [Greenhouse Gas Reduction Fund](#) (GGRF) with a goal of mobilizing financing and additional private capital for greenhouse gas- and air pollution-reducing projects, with special attention to low-income and disadvantaged communities (LIDACs).

The John D. and Catherine T. MacArthur Foundation (MacArthur) contracted with the Center for Impact Finance at the University of New Hampshire's Carsey School of Public Policy to identify and assess the ways foundations and other catalytic capital investors can support the effective and equitable implementation of GGRF. In particular, the Foundation sought to identify investment opportunities for vehicles such as program-related investments (PRIs).

We interviewed fifteen key stakeholders in the community development finance field and clean technology ecosystem about anticipated constraints on GGRF funding and potential solutions and enhancements, including all eight organizations/coalitions that have since been selected as National Clean Investment Fund (NCIF) and Clean Communities Investment Accelerator (CCIA) recipients and one Solar for All (SFA) recipient with national reach. The interview list is documented in the Addendum.

GGRF is divided among three programs with distinct objectives, but a minimum of 40% of all capital must go to low-income and disadvantaged communities, in compliance with the [Justice40 Initiative](#):

- **National Clean Investment Fund (NCIF)**—\$14 billion for affordable clean technology financing in communities across the country guaranteed to leverage private capital on a 7:1 basis, administered by 3 intermediaries.
- **Clean Communities Investment Accelerator (CCIA)**—\$6 billion to capitalize community lenders and for technical assistance to support clean technology deployment specifically in low-income and disadvantaged communities, through 5 intermediaries.*
- **Solar for All (SFA)**—\$7 billion for grants to expand access to solar for low-income households through funding and financing through states, territories, Tribal governments, and select municipalities and nonprofits.*

**CCIA and Solar for All resources must all, i.e., 100%, benefit low-income and disadvantaged communities. Therefore, additional investment and grants that ensure these programs work well will maximize equity impact as well as greenhouse gas reduction.*

Overall, GGRF aims to leverage significant private capital and spur commercial investment to help combat the climate crisis and build a domestic clean energy industry. Priority projects under GGRF include (1) Distributed Energy Generation and Storage, (2) Net-Zero Emissions Buildings, and (3) Zero-Emissions Transportation. All CCIA-funded projects must fall into one of these categories. Other eligible projects for NCIF funding include those that reduce or prevent greenhouse gas emissions as well as other air pollutants, may not have been otherwise financed, will mobilize private capital, and utilize commercial technologies. That said, GGRF funds do not address the full

range of needs and opportunities related to decarbonization, climate resilience, and environmental justice, particularly for low-income and historically marginalized communities.

There is an essential role for funders and impact investors willing to invest in projects that supplement GGRF funds or invest in projects that may not meet the eligible projects standards under the GGRF definition, as well as systems to deploy not only GGRF but the many billions of dollars needed for a clean energy transition.

GGRF-eligible investments will need to be incentivized as well as sequenced and/or stacked with other improvements that may be pre-conditions or just make sense to do at the same time. Lenders will need complementary concessionary capital to deploy and maximize the impact of GGRF and achieve their own community economic development goals. There is a role for loans in various parts of the clean technology investment value chain, including the small business development ecosystem. There is also a critical need for grants to build out the value chain.

INVESTMENT MARKETPLACE AND BARRIERS

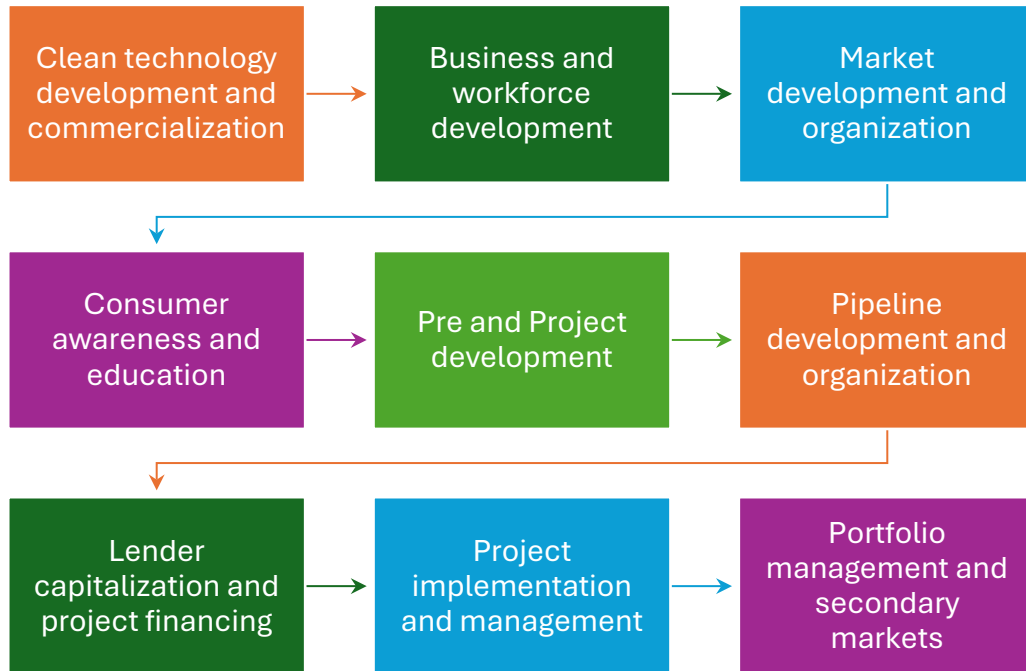
Investment opportunities span the clean energy economy

We found that there are financing and other investment opportunities at all stages of technology, program, and project development and implementation related to GGRF. Debt capital is needed for a wide range of products that GGRF will/may not support. Also, while our focus was on financing opportunities, it is clear that grant funding is still critically and significantly needed to effectively implement the GGRF initiative. Investment is needed across all four broad segments of the clean investment value chain, including:

- 1) the development and commercialization of new clean technologies
- 2) community engagement and predevelopment technical assistance to raise awareness of project opportunities and bring them to a financeable point, as well as workforce development to be able to develop and build projects
- 3) lender capitalization and project finance—including pre-development, construction and permanent financing
- 4) asset management and investment portfolio management, including secondary markets activity

See Figure 1.

Figure 1. Clean Technology Investment Value Chain



The Lincoln Institute of Land Policy and What Works Plus recently produced the report *Pathways to Finance a More Equitable Clean Energy Transition*¹ based on findings from a large group of field leaders and advisors. They found that the clean energy marketplace is still nascent—very atomized and segmented, with an over emphasis on capital supply rather than the need for new models and enhanced market infrastructure. Furthermore, there is little to no attention on developing the diverse supplier businesses definitively needed to grow the clean energy economy. The report recommends investments in field building, growing and developing networks, and building innovative capital structures to enable and extend market participation.

Foundations and other impact investors will also need to provide financing to GGRF intermediaries that will play an important role in supporting local contractors, installers, and vendors needed to meet the surge in clean energy and efficiency project demand, and in a way that ensures local economies reap the economic development upside.

¹ Xavier de Souza Briggs and Robert J. McGrail. 2024. *Pathways to Finance a More Equitable Clean Energy Transition: Developing Projects, Diverse Businesses and Ecosystems for Just Community Outcomes*. Draft analysis and recommendations, Lincoln Institute and What Works Plus, Cambridge, MA (April).

Affordability, the need to drive demand, and workforce issues are the three greatest barriers to investment

Affordability

The GGRF represents a cornerstone in the investment strategy needed to transition to a clean energy economy in the United States. However, for such a transition to be wholly effective and equitable, we need to solve for affordability in LIDACs. Many affordable housing owners, low-income homeowners, and small businesses in low-income communities simply have limited income with which to repay a loan. Not all building decarbonization projects will generate energy cost savings for the building owner (particularly electrification projects in areas served by low-cost utility gas), and payback periods for many common energy improvements exceed 10 years, such that for loans to be cash-flow-positive they must exceed the term that most market investors would be willing to provide. Moreover, rules for the new DOE Home Energy Rebate programs prohibit utilizing energy cost savings estimates when underwriting the borrower's ability to repay, due to the uncertainty of those estimates. Finally, beyond the cost of the energy projects themselves, many decarbonization and distributed renewables projects for buildings in low-income communities carry additional costs not faced in other communities. For example, double-digit percentages of homes seeking to enroll in the DOE Weatherization program are “deferred” (denied assistance) because of structural, health, and safety issues present in the home that weatherization funds may not be used to address. Similarly, community solar projects in low-income communities often face a cost penalty because of the lack of investment in grid infrastructure in those communities, driving significantly higher-than-normal interconnection costs.

Solving for affordability will require braiding multiple resources. The GGRF is not the only program that helps with affordability in LIDACs; IRA tax credit programs will help and are a bigger program overall than GGRF. Recent changes to the investment tax credit now allow for “direct pay” of the credit, greatly easing their use (in particular for smaller projects). The IRA and Bipartisan Infrastructure Law also provided \$9 billion in DOE Home Energy Rebate programs, \$3 billion for the DOE weatherization program, \$2 billion for the EPA Community Change grant program, and dozens of additional programs that have Justice40 goals within the IRA. Low-cost capital and grants for planning, operations, and practice sharing will leverage the broad range of recent federal changes and investments.

Even with these additional resources in play, many practitioners are expecting that GGRF dollars will be deployed on highly concessionary terms in order to resolve project affordability gaps. For example, many low-income community solar project developers are seeking terms of 20 years with interest rates in the low single digits, even after applying renewable energy tax credits and low-income adders. Loans for whole-home energy retrofits to low-income homeowners will usually need terms of 10 years or longer, and at least some component of those loans will likely have to be deployed at zero percent interest with deferred principal repayment or even forgivable principal. Primarily for these reasons, most GGRF applicants proposed leverage levels that are significantly lower than the maximum leverage that regulators and funders in their sector would allow—there is only a limited amount of market-rate, risk-adjusted capital that can go into a low-income project and have the project still pencil.

Driving Demand

Driving demand—meaning how to build a pipeline of financeable projects—is the ultimate concern around implementing GGRF and other programs both in LIDACs and moderate-income communities alike. Here, the concern is not just about affordability, but about the difficulty of the customer journey, whether we are talking about a low-income homeowner, a mom-and-pop landlord, a community solar developer, or a community health clinic. Success of the program will depend on helping the would-be borrower on every step of their journey, starting with awareness and going all the way through project ideation, feasibility, pre-development, development, financing, and operations. When climate projects are built in an underserved community, it is because someone living or working in that community has made a concerted effort and completed a journey. For example:

- A **building owner**—perhaps a homeowner, landlord, or a community-serving facility like a health clinic, day care center, or grocery store decided to improve their building’s energy use, safety, and comfort. They might have weatherized the building, installed heat pumps, put solar panels on the roof, or fortified the building against climate risks. They first had to realize that their building even needed energy improvements—which is not easy to understand. From there, they had to find unbiased, expert advice on what improvements would make the most sense; find trustworthy contractors; figure out what rebates and incentives they could access; qualify for financing; manage construction; and maintain the project, including calling in warranties if there were equipment failures.
- A **project developer accountable to the community** has helped community members to design, finance, and develop a clean energy project, such as a community solar project or a community resilience hub. This journey may have begun when community members decided that a clean energy project could achieve goals around reducing energy cost burdens, creating quality jobs, or improving community resilience. The community then sought and found a developer who placed their priorities at the center of their mission. The developer then had to find a site, design the project, structure financing, obtain permits and utility interconnection approvals, line up energy off takers, and supervise construction, operations, and maintenance. Additionally, the developer faced an arduous journey to build the organizational capacity to complete these tasks and had to invest a lot of their own money to even get the project started.

As noted in the Lincoln Land Institute / What Works Plus study, more so than “new models,” there has been a lack of recognition of the need for basic, person-to-person customer service and technical assistance to generate demand. The GGRF provides only limited funding for “market building” activities, emphasizing instead the deployment of GGRF funds as capital for project finance. A case study on market building activities is in the Addendum.

Workforce and Small Business Development

Workforce development is critical for the clean energy transition. The Political Economy Research Institute (PERI) at the University of Massachusetts Amherst found that there would likely be labor shortages in 20 out of the 27 occupations with significant entry requirements in relevant employment areas impacted by investments in the IRA, Bipartisan Infrastructure Law (BIL), and

Creating Helpful Incentives to Produce Semiconductors (CHIPS) Act.² The PERI report found that construction was “by far the sector with the highest concentration of occupational employment that is likely to experience labor shortages as BIL, IRA, and CHIPS investments expand to reach their full targeted levels.”³ The Interstate Renewable Energy Council’s (IREC) 2022 National Solar Jobs Census also found that “44% of solar industry employers said it was ‘very difficult’ to find qualified applicants—the highest such percentage ever recorded in the *Solar Jobs Census*.”⁴

Moreover, investments in workforce development and small business development could promote social equity and address significant racial and gender disparities in small business ownership and workforce participation in the clean energy industry. For example, Black workers comprise just 8 percent of the clean energy workforce—meaning they are under-represented by 40 percent—and women represent under 30 percent of all workers in the sector.⁵ The Initiative for a Competitive Inner City (ICIC) found that Black- and Hispanic-owned manufacturers were highly underrepresented in 13 key supply chains for clean energy, representing only 0.5 percent and 0.8 percent, respectively, of “all privately held businesses in these supply chains.”⁶

Despite the gravity of these disparities, the IRA provides no new small business development supports and little new support for workforce development. New workforce initiatives consist primarily of \$200 million for home energy contractor training and requirements for developers of large solar projects to provide apprenticeship opportunities. The GGRF program asked applicants to develop workforce strategies, but largely as an unfunded mandate—for example, the Solar for All program requires all applicants to undertake workforce activities, but to fund them out of the same 25 percent of program funds that must be used for program administration, market-building activities, and developer capacity building. Loans to small businesses in the clean energy sector (for example to solar contractors, heat pump installers, or manufacturers of clean energy equipment) would not appear to be an eligible use of GGRF financial assistance dollars, as the loans do not directly reduce carbon emissions.

INVESTMENT OPPORTUNITIES

Financing Needs

Opportunities include financing that provides additionality in terms of volume of lending and range and volume of impact, as well as financing that fills specific gaps in the value chain or capital stack. The following investment types were identified as critical to deploying GGRF. Generally speaking, the long-term nature of many clean energy, energy efficiency, and climate justice projects require long-term financing, which is not generally available or doesn’t adequately complement project timelines.

Leverage

Various models of investment are possible to help GGRF grantees and their subrecipients achieve the goal of leveraging private capital that is central to the design of the program. These include:

² https://peri.umass.edu/images/publication/PERI_BGA_Labor_2_28_24.pdf, pg 1

³ https://peri.umass.edu/images/publication/PERI_BGA_Labor_2_28_24.pdf, pg 25

⁴ <https://irecusa.org/census-executive-summary/>

⁵ <https://e2.org/wp-content/uploads/2021/09/E2-ASE-AABE-EEFA-BOSS-Diversity-Report-2021.pdf>

⁶ <https://icic.org/wp-content/uploads/2024/05/Racial-Equity-in-Americas-New-Industrial-Transformation.pdf>

- **Enterprise-level debt investment in GGRF grantees or their subrecipients.** Generally, both grantees and subrecipients will seek concessionary impact investments such as PRIs to meet leverage targets. Ideally, investments will be low-cost, long-term, flexible investments enabling the GGRF recipients to make affordable, flexible loans. Many GGRF recipients expressed interest in accessing funds through pooled funds comprised of multiple investors to achieve scale. Investments could take the form of equity-like investments (bank EQ2⁷ is an example) to lenders and deposits to credit unions/banks.
- **Investments into secondary market vehicles.** NCIF grantees in particular, but potentially other players as well, will be seeking to build pools of loans by purchasing them from community lenders. Impact investors could co-invest with the NCIF grantees into these pools of loans, which might be held in special-purpose vehicles (SPVs). SPV investments could consist of both debt and equity.
- **Project-level co-investment.** While most funders and impact investors do not prefer to invest at the project level, there are exceptions. Certain local impact investors, such as holders of Donor-Advised Funds (DAFs) or local corporations, may have an appetite for investing in specific local projects that appeal to their geographical and thematic interests. For example, there could be possibilities for DAF holders to provide recoverable grants to finance pre-development of renewable energy projects in their community or to support a nonprofit solar developer. Local corporations might be interested in purchasing voluntary carbon offsets from projects that they can actually see from their office window. Funders who do not invest at the project level but would like to spur this kind of investment could support the development of programming to encourage it.

Keep in mind that regardless of the investment mechanism, there will be two types of underlying projects—those that can leverage private capital (banks and other institutional investments) and those that will need a source of leverage that does not yet meet market requirements because of pricing, risk, term, etc. Investments in the latter category would be most helpful as pooled or aggregated PRI-like dollars. One of the primary GGRF program objectives is to lever private capital, and to be eligible all projects must mobilize at least some level of private capital. That said, the EPA is not establishing a blanket leverage requirement on all applicants.

Short-term Financing for GGRF Grantees

One of the clearest needs of funders/impact investors is for bridge financing and/or lines of credit to manage liquidity of GGRF and other federal funds. Although the specific rules have not been finalized, funds from the EPA may be released to GGRF recipients after financing commitments are made and deployed; there may be significant time lags between when GGRF recipients commit funds and when they are reimbursed for those invested funds. Liquidity constraints may be particularly acute for credit unions. There will also be a need for bridge financing for tax equity and other incentives and rebates.

⁷ <https://www.cdfifund.gov/sites/cdfi/files/documents/eq2-overview-by-opportunity-finance-network.pdf>

While GGRF recipients believe they will be able to draw down funds in a lump sum and place with a fiduciary agent, any draws from that agent will be subject to the federal 5-day expenditure rule. GGRF funded organizations are clarifying with the EPA, probably after they sign their agreements, at what level that 5-days pertains to, but in the worst case, it could be every disbursement at the project level.

Gap Financing

GGRF recipients will need capital to finance prerequisite and “whole building” improvements not eligible for GGRF, which do not directly reduce carbon including structural improvements, health/safety, environmental remediation, and resilience measures. As with leverage, this requires catalytic capital that can be blended into one loan. Examples include projects in which roof repair is needed before solar can be installed. The lender may need to use different funds for the roof improvement before using GGRF to finance solar panels. It’s still unclear to what degree these investments could be covered by GGRF. Some “enabling investments” are definitely allowed under Solar for All, but it is less clear for CCIA. Stakeholders are looking to EPA for clear standards.

Small Business Financing

As discussed earlier, GGRF funds will likewise be limited in terms of providing financing for small business creation, growth, and working capital. Clean technology manufacturers, vendors, installers, and project developers are vital to GGRF implementation, and we need to increase the number and scale of these businesses. Furthermore, lack of support for minority- and women-owned firms will undercut the equitable deployment of GGRF and community economic development goals. Financing uses might include startup capital, equipment and vehicle loans, and working capital (or grant funds) for training/education, staffing up, marketing, and predevelopment costs.

Credit Enhancements

First-loss capital, loan loss reserves, and/or guarantees will be needed to deploy the GGRF in the most difficult places to work, which are also disproportionately affected by climate impacts. The need may extend to secondary markets. Notably, enhancement is needed for credit unions to do commercial financing, which is a relatively new market for the industry. Credit enhancement is an allowed use of GGRF funds, but it is insufficient and will need to be used creatively.

Risk Capital

Risk capital will be needed to catalyze and scale innovative finance models and structures, support predevelopment costs (including technical, engineering, legal, and other activities), and fund technology innovation including “early-stage” technologies not yet covered by GGRF. Early stage technologies encompass technologies at various stages of commercialization from initial demonstration to later commercial scale. GGRF requires that eligible technologies have been deployed at least three times for a period of five years in the United States. Many climate technologies needed to achieve necessary greenhouse gas emissions reductions still do not meet this threshold.

Grant Funding Needs

Philanthropic organizations can provide for a range of investment needs to support GGRF recipients, consumers, and the market players needed to deploy GGRF. While these needs are not new in light of GGRF, they are critical to the *equitable* deployment of GGRF while persistent barriers remain for low-income and disadvantaged communities in terms of energy policy and accessing information, expertise, and sources of equity.

Deal-level Subsidy

Subsidy is still needed at the transaction level in some cases, for example: in projects for low-income people, projects that don't pencil out due to energy pricing or holistic projects with added costs, and projects that can't access incentives such as the Low-Income Housing Tax Credit (LIHTC). Subsidies may include grants to projects, deposit assistance, and interest-rate buydowns. Grants to projects would most likely come from community foundations as opposed to large, national foundations.

Small Business and Workforce Development

In addition to financing, business development in LIDACs needs to include soft and flexible capital to form or formalize businesses, and equity and/or quasi-equity that could be deployed via aligned venture firms. Equity could be pooled and recycled, to move a variety of deals and businesses forward. Funding is also needed for business accelerators (regional and national), workforce training, and market and pipeline organization. This is in addition to flexible (long-term, low-cost) financing from impact investors to intermediaries would also allow financing that requires no upfront costs and low or no interest, helping businesses overcome the first cost barrier and minimize overall payback expense.

Awareness, Education, and Technical Assistance

There is a great need to build culture and comfort around clean energy and technology investments for consumers, lenders, and Tribal governments. Support is needed for a range of consumer and stakeholder information and messaging, training for lenders and community-based organizations, financial product development, implementation tools development, and analytics.

Capacity Building

GGRF recipients and their networks need a range of capacity building support in addition to training. They need access to a talent and resource pool, and funding for planning, consulting, and coordination among recipients. Organizational development/operational support may be needed for emerging green banks and key community-based organizations. It is also important to differentiate between the funding needs for the direct GGRF awardees and the sub-recipients. The direct EPA awardees will be able to invest to some degree in the capacity and success of the sub-recipients. For the sub-recipients, many have already incurred planning and capacity-building expenses and will have additional training expenses as well as a heavier-than-usual reporting and compliance burden. Also, the small group of sub-recipients that are experienced green financing and program practitioners are being tapped to share their (valuable) expertise with the field, through planning and participating in panels, serving on advisory committees, etc., and their investment of time and collaborative learning should be supported.

Local Planning, Partnership-building, and Integration

Federal programs are flowing to local communities in a very fragmented way, through a myriad of agencies and along convoluted pathways. The fragmented nature of the federal programming will tend to create further fragmentation at the state and local level in the absence of funding that helps to integrate across silos. For example, currently, few State Energy Offices are even in active conversations with major GGRF recipients, much less with the many new community lenders who will become involved in climate lending through the GGRF CCIA program. Highly flexible funding is

needed to help partnerships of local groups plan and assemble coherent local programming out of these fragmented pieces. Some examples of initiatives that are helping to do this include [Communities LEAP](#), a program of the U.S. Department of Energy, and the [Bloomberg Sustainable Cities Initiative](#). There is a significant need for more funding of this sort—Communities LEAP operates on a shoestring budget, and Sustainable Cities is limited to 25 large cities.

Non-Financial Needs

In addition to making capital investments and grants, philanthropy and impact investors can support GGRF implementation through:

Encourage Investor Leadership

With a unique ability to convene, funders/investors can lead on standardization among GGRF recipients and the funder and investor communities. Coordination needs to happen both at the macro scale, amongst philanthropic funders and government agencies funding various programs, and at the state and local scale. Funders also need to persistently engage with major banks, and local philanthropy with regional banks.

Promote Policy, Education, and Advocacy

In addition to making grants to support policy advocates, funders/investors can directly engage in advocating to EPA in support of the effective implementation of GGRF and to federal legislators to mitigate political risk moving forward. Additionally, funders/investors can advocate for upstream policy to drive down upfront costs at the federal, state, and local levels.

INVESTMENT PRINCIPLES

Philanthropic/impact financing and funding should reflect the following characteristics.

Comprehensive and Coordinated

Per the Lincoln Institute et al., capital-first solutions without linked strategies and supports to create deal flow will fail to source, scale, and support capital deployment. Financing must be linked to other investments. Funders/investors should consider needs and opportunities at every stage of development and deployment of GGRF.

Concessionary and Flexible

Financing needs to be flexible. Loans should be low-cost, long-term, subordinate, and non-recourse. Terms may need to extend 7–10 years for consumer projects and 15–30 years for larger projects.

Streamlined

Investments should be as frictionless as possible. Funders/investors should reduce the administrative burden of applying and reporting. Investments at the fund and portfolio level would be particularly useful. There should be clear criteria for investments at the project level.

Balanced and Equitable

Investment programs should balance rapid deployment with preserving resources for more difficult projects that will take time to develop. Investments should drive asset ownership and wealth transfer to LIDACs. There should be heavier subsidies for investments in the most difficult places.

Sustainable

Investments should help create and support systems that will be sustainable beyond the 7-year GGRF program timeline.

RECOMMENDATIONS

GGRF recipients addressing climate finance justice issues face huge challenges including pipeline development, workforce training, lending and the task of **balancing speed, scale, and equity**. Total investment, beyond government resources, needs to be sizeable.

Continue to Prime the Pump

Foundations have already begun to do this and should continue to make \$3–5 million seed grants and/or low or no cost bridge loans to GGRF recipients to help them ramp up. Make all investments forgivable should they not close with EPA for some reason. Also, consider additional, more sizeable investments in GGRF recipients, such as \$10+ million flexible balance sheet investments. These grants and loans need to be made quickly, before EPA funds are dispersed and with minimal underwriting requirements.

Spur Collective Action

Shared infrastructure will be necessary to reach GGRF deployment and recipients' economic development goals. This includes some level of standardization, to reach scale and develop/access secondary markets and support market organization, which can also conflict with the goal of serving LIDACs. Philanthropic and impact investors should organize, coordinate, and collaborate where possible, and encourage and invest in recipients to coordinate and collaborate. Investors can encourage open-source standardized product design but should also customize support as necessary to meet local needs in LIDACs.

Invest in Shared Capacity

Support a one-stop-shop for training, technical assistance, reporting, evaluation, communications, and potentially financing. Alternatively, or in addition, create or invest in a pool of talent and industry resources for GGRF recipients to draw on. Funds for this type of investment are very limited in GGRF budgets. Shared capacity will reduce overall costs for all GGRF recipients and accelerate learning.

Amplify GGRF

Establish a complementary pooled fund that is flexible and with different uses. Funds could be drawn down at the GGRF recipient, subrecipient, and/or transaction level. Alternatively, or in addition, funders/investors should make investments across the investment value chain.

Stimulate Secondary Markets

Impact investors, including foundations, should participate in secondary market issuances coming out of the GGRF program to send a signal to the market that issuances with higher green standards, more transparency, and inclusion of smaller assets in low-income and disadvantaged communities are valuable and marketable. If foundations could anchor these markets as early movers, it would be a strong signal to other institutional investors to participate to build access and liquidity in these markets.

FINAL THOUGHTS

GGRF projects will have to meet many federal requirements that are financially difficult in smaller and thinner cash flowing projects. There is potentially quite a large role on the capital investment side that would be less subsidy-like but still very important. For example, projects could combine traditional and philanthropic sources during construction. This would result in a lower blended rate with risks being limited to construction; however, the overall risk would be fairly low due to a guaranteed GGRF takeout.

As such, it may make the most sense for at least the NCIF awardees to employ GGRF resources as permanent takeout and use private capital for both construction and bridge financing for projects that will find the federal requirements overly challenging. GGRF awardees will clearly invest in larger projects that are already subject to the federal requirements, but if we really want this funding source to reach communities and projects not typically served at scale, rethinking the private/public partnership will be important, allowing the use of private funds to achieve the legislation's intent. This will have a ripple effect on not only the projects GGRF is able to finance but also the contractors that will be able to participate. This would enable job creation, along with some of the other worthy aims of GGRF.

While the climate finance tools offered by the IRA are powerful, they are also fractured, with dozens of programs being administered with the involvement of multiple federal and state agencies. They also come with particular sets of restrictions for each program that require community practitioners to engage in problem solving—for example, providing financial counseling to maximize uptake of 25C tax credits or coordinating with workforce efforts to help ensure that GGRF investments are also creating quality jobs. Furthermore, not all the critical projects that are needed for the clean energy transition are eligible for funding under the GGRF and other IRA programs. What is in short supply is the "glue" to put these pieces together in support of a comprehensive strategy at the community level. Private sector financing, including flexible, timely financing from impact investors, will be critical to the success of the GGRF program.

ADDENDUM

Case Study: Market Building Activities

The HEAT Squad program offers a good test case for the implementation of the IRA. NeighborWorks of Western Vermont, a CDFI Loan Fund focused on affordable homeownership, launched HEAT Squad in 2010, which has helped thousands of rural Vermonters save an average of over \$1,000 a year in energy costs through energy audits and assistance navigating funding/financing options. A third-party evaluation showed that contact with the HEAT Squad increased the likelihood that a low-income Vermonter would make home energy retrofits by 164 percent.

Vermont already had a generous set of home energy rebates available—up to \$2,500 per homeowner. Then NeighborWorks of Western Vermont received a \$5 million grant from the U.S. DOE which they used to leverage several million dollars of capital from banks and the Vermont State Treasurer to establish HEAT Squad. This closely mirrors the situation today in which a CDFI might get a GGRF grant, leverage it with private capital, and develop the significant capacity needed to help a homeowner access a funding and financing package including all possible incentives.

The HEAT Squad program developed very slowly at first. In the first 3 years, they had to lean into their relationships with the community in order to help 1,000 homeowners make deep energy retrofits in a rural county of only 25,000 households. They ultimately developed a *white-glove, concierge customer service* for homeowners—the “easy button.” **It’s important to examine the average customer’s journey.**

First: how does a homeowner know they are spending more than they need on energy bills? Most of them only had a vague idea that something might be wrong; maybe some rooms in the house are colder than others and they don’t really know why.

Second: if they do need to do something, how do they know what to do? For example, many homeowners think they need to replace the windows, when what they really need to do is basement air sealing.

Third: maybe they do realize the need to insulate the attic better—but they have a leaky roof! They may have all kinds of needs in the home that aren’t strictly energy-related, but they must address them before they can make energy improvements.

Fourth: how can they find a contractor they can trust, particularly if they live in a community where there’s been a lot of home improvement scams? And in many communities: how can they find a contractor at all?

Fifth: how can they afford this work? Someone might tell them about a rebate program, but how do they know whether they qualify? Or if they can get a loan?

Sixth: how do they know that the job was done right? What if the new heat pump doesn’t work right; are they going to be covered by a warranty? Who’s going to help with that?

Looking at all these information gaps, barriers, and hassles, it's easy to see why doing nothing is a real option for homeowners. It's the default option, in fact: do nothing, until maybe your boiler breaks down one winter night, and then you'll just buy whatever boiler is available from the first heating company who answers the phone, borrowing from wherever you can, regardless of whether it's a good move in the long run. GGRF lenders need to help people avoid this kind of situation and make the alternative much easier.

In short: when the HEAT Squad started up, they had all the tools in place they needed to make the math work, but *to succeed, they needed to build a process that worked for homeowners. Here's what the alternative scenario—the easy button—looks like.*

First, the HEAT Squad worked with volunteer committees in towns around the county to set up presentations in church basements and schools. They had phone-a-thons with residents calling their neighbors to tell them about how the HEAT Squad could help them. The information people *really* trust doesn't travel on wires; it travels through folkways—person to person.

The HEAT Squad hired a corps of professionally certified Energy Auditors—and called them Energy Advisors. When you called the HEAT Squad, they would schedule an Energy Advisor to get out to your home right away. They'd do a full assessment of your home—energy, health, and safety issues. The Advisor would sit at the kitchen table with the homeowner with a computer-generated report including the top home improvements you should make, what each would cost, the rebates you'd get, how much you'll save, and information on how to finance the rest.

The HEAT Squad had a pool of vetted, pre-qualified contractors to do the home improvements. The Energy Advisor would line up a contractor for the homeowner and do a test-out audit after the job was done to make sure that it was done right.

And they helped the contractors as well to make sure that they weren't going to leave the customers hanging! The HEAT Squad made them loans for new trucks and working capital. They started a learning community for them—they called it a Guild—to share tips and help each other out. The HEAT Squad even got involved with workforce programs to help them build their staff up.

They did everything to make the math work for the homeowner—help filling out the rebate forms, 0% bridge loans to tide people over until their rebate came in, layering in other sources of grant funds they had to address health and safety issues. And through all of it, the homeowner could call their Energy Advisor any time.

The program was not cheap. The HEAT Squad also had to make the math work for lenders, so that they could make it work for the homeowner. Community lenders are complex organizations but, at the risk of over-simplifying, their financial sustainability can be boiled down to just a few numbers. **Here's how those numbers will likely play out for a community lender running a green home improvement loan program.**

A mission driven lender might be able to make a loan at 5 or 6 percent, but other times the rate might have to be lower—even 0 percent—to make the math work for a low-income customer or a challenging project. So, the fund might generate a yield on total assets of anywhere between 2 to 6 percent. Interest expense might run to 2 or 3 percent of program assets, based on what CDFIs are willing to lever—2:1 or 3:1 using deposits if they are a depository, and foundation PRIs and bank debt if they are a loan fund.

In the case of HEAT Squad’s portfolio, defaults were low due to great customer service and solid construction management that went a long way to reducing risk. A Lawrence Berkeley National Laboratory [analysis](#) of over 50,000 unsecured home energy efficiency loans showed credit performance on par with—actually a little better than - secured, prime auto loans.

But the operating expenses, largely staffing, are expensive for community lenders. For a high-touch program like home improvement lending, which involves high cost for a relatively small loan, a CDFI is likely to be at the high end of this range.

The central challenge for any green home improvement program is to figure out how to create a great customer experience, while keeping the operating costs per customer manageable. *That challenge will require constant experimentation, learning, and collaboration.* There are a number of strategies that have the potential to boost the efficiency and effectiveness of customer service teams, including:

- “Big data” tools to target the homeowners who have the most to save
- Tech tools to speed up the process of figuring out which rebates someone qualifies for and auto-generate an application
- Shared operating infrastructure for lenders such as platforms for construction management and contractor vetting
- Training and knowledge sharing collaboratives, so lenders aren’t all having to figure out on their own what a good loan policy looks like
- Supporting “building hubs”—customer service centers that could support a whole city with Energy Advisors providing unbiased, timely assistance, and then connecting customers with lenders

GGRF grantees should collaborate around these kinds of strategies. At the same time, there is no getting around the customer’s need for skilled, hands-on support. **The bottom line: both customer service innovation and core, community-based customer service programming will need to be funded with federal and philanthropic dollars.**

List of Interviews

Appalachian Community Capital

(Green Bank for Rural America)
Donna Gambrell, Jesse Fripp, and Pam Porter
CCIA – \$500 million award

Climate United (Calvert, Community Preservation Corporation, Self-Help)
Beth Bafford
NCIF – \$6.97 billion award

Coalition for Green Capital
Eli Hopson
NCIF – \$5 billion award

Groundswell
Michelle Moore

Inclusiv
Cathie Mahon
CCIA – \$1.87 billion award

Inclusive Prosperity Capital
Kerry O’Neill
SFA – \$ 250 million award

Justice Climate Fund (Community Builders of Color Coalition)
Doug Sims
CCIA – \$940 million

National Community Investment Fund
Saurabh Narain

Natural Resources Defense Fund
Adam Kent

Native CDFI Network
Pete Upton and Kristen Wagner
CCIA – \$400 million award

Opportunity Finance Network
Amber Bell and Beth Lipson
CCIA – \$2.29 billion

Power Forward (Enterprise, Habitat, LISC, Rewiring America, United Way)
Elise Balboni
NCIF – \$2 billion award

Rewiring America
Erik Shilts and Aimee Witteman

SELF (Solar and Energy Loan Fund)
Duanne Andrade

Wells Fargo – Enterprise Sustainability Group
Jeff Schub

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