Harnessing the transformative potential of the Greenhouse Gas Reduction Fund

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ABOUT CLIMATE POLICY INITIATIVE

CPI is an analysis and advisory organization with deep expertise in finance and policy. Our mission is to help governments, businesses, and financial institutions drive economic growth while addressing climate change. CPI has six offices around the world in Brazil, India, Indonesia, the U.K., and the U.S.

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EXECUTIVE SUMMARY

Created under the Inflation Reduction Act (IRA) in 2022, the Greenhouse Gas Reduction Fund (GGRF) is set to provide USD 27 billion in grants to mobilize financing and private capital to address the climate crisis through projects that reduce GHG emissions in the United States. The funds will be made available to state, local, and Tribal governments, as well as non-profit institutions, especially for low-income and disadvantaged communities (LIDACs).

The GGRF presents a transformational opportunity to accelerate progress towards climate justice in the United States. The funding provided by the GGRF has the potential to go beyond emissions reduction by supporting sustainable community and economic development in LIDACs, and enhancing climate resilience in these communities that are frequently on the front lines of climate change.

The GGRF could help to align climate, community, and financial actors to establish a virtuous cycle that increases the wealth and resilience of LIDACs while reducing GHG emissions. Investment in emissions reduction technologies can jumpstart a variety of benefits for LIDACs, including increased household wealth and health due to low-cost and reliable renewable energy, building electrification, and electrified transport technologies. Higher demand for labor and local expertise to build and install clean technologies can boost job creation and revitalize local job markets, thereby promoting wealth creation and economic mobility. Additionally, channeling federal funds through community development financial institutions (CDFIs) and green banks can increase access to finance in LIDACs and therefore facilitate sustainable economic development.

Nevertheless, challenges must be overcome to enable effective implementation of the GGRF. These include:

- The short timeframe for GGRF implementation and disbursement of funds may leave the most disadvantaged communities behind.
- The diverse range of experience of CDFIs in climate-related underwriting and operational capacity leads to significant variability in their ability to effectively absorb and deploy GGRF funds.
- Varied experience of green banks lending in LIDACs prompts a need for TA and support to scale their investments in these communities.
- The large number and diverse nature of stakeholders in the GGRF ecosystem creates challenges for coordination and systemic learning.
- Barriers exogenous to the GGRF, including workforce capacity and pipeline development pose risks to the success of GGRF-supported projects.

CPI has identified five areas of action that can help the GGRF achieve its potential. These areas of action do not align explicitly with the barriers described above, but rather holistically address the challenges to GGRF implementation, recognizing the interrelated nature of these barriers. These areas also require coordination across all stakeholders in the GGRF ecosystem, including all levels of government, community groups, financial institutions, small businesses, philanthropies, and more. Our vision of the elements needed to achieve this transformation includes:

1. Catalyze private capital at scale

While the USD 27 billion in grant funding from the GGRF represents a substantial increase in federal support for such communities, this pales in comparison to the estimated USD 2.8 trillion in climate finance required by LIDACs through 2035 under a national pathway to net zero GHG emissions by 2050.[1] Therefore, GGRF funds must be used to catalyze larger volumes of private climate finance for LIDACs. This could include supporting a more robust secondary market for GGRF-supported loans; guarantee funds; senior lending facilities; and securitization vehicles. Catalyzing these additional funds deepens the potential scale and scope of the impact, better positioning the GGRF to accelerate climate justice in the United States.

2. Standardize definitions, products, and underwriting

To make these financing structures possible and to rapidly scale lending, the GGRF can encourage the development and deployment of shared underwriting standards, definitions, and processes. Standardization of financial products, term sheets, use cases, and underwriting criteria can encourage replication, reduce duplication, and alleviate capacity constraints.

3. Coordinate and target technical assistance

As the GGRF and its associated financing structures will increase the volume of capital and speed of delivery, coordinated and targeted TA will be needed to ensure that the most disadvantaged communities receive support. This training and TA expansion also build a more robust local system for delivery for both the end users and clients of the CDFIs and banks, but also for the broader economic, innovation, and community development ecosystem. A hub-and-spoke TA framework would allow for centralized support at the national level, while providing specialized support regionally and thematically (such as by lending institution type, rural/Native communities, technology type, etc.).

4. Enhance alignment of government efforts at all levels

Intra- and inter-government coordination is necessary to increase the effectiveness of each individual government action. However, many government agencies are unaware of opportunities in other agencies or levels of government, and do not align on timelines, priorities, definitions, permitting, or application processes. Federal, state, and local government incentives should be braided to make project development easier and expand the impact of each incentive.

1 Climate Policy Initiative. 2024. "CPI GGRF Investment Needs." https://cpiglobal.maps.arcgis.com/home/item.html?id=5d3be8d16d6941009979417864d4d9ae. These data are an update to CPI's August 2023 Interim Report, which contains a full description of the methodology. See: Grant, Chris et al. 2023. "Implementing the Greenhouse Gas Reduction Fund: Investment needs, barriers, and opportunities." Climate Policy Initiative. https://www.climatepolicyinitiative.org/wp-content/uploads/2023/08/CPI-Implementing-GGRF-Interim-Report-August-2023.pdf.

5. Create a sandbox culture of collaboration and learning

Creating a culture of collaboration and learning around the GGRF will allow for real-time iteration and enable speed. By implementing collaboration and learning structures from the outset, actors involved in the GGRF can share lessons learned in real-time, allowing for rapid recalibration around best practices. A centralized learning hub, innovation labs, targeted convenings, and accountability frameworks would be key elements in enabling such a sandbox culture.

Figure ES1. Five recommended actions to achieve GGRF potential

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1. TRANSFORMATIVE POTENTIAL OF THE GREENHOUSE GAS REDUCTION FUND

1.1 GGRF OVERVIEW

In 2022, the U.S. Congress passed the Inflation Reduction Act (IRA), which included the Greenhouse Gas Reduction Fund (GGRF). This will disburse USD 27 billion in grants to mobilize financing and private capital to address the climate crisis through projects that reduce GHG emissions in the United States.[2] These funds will be made available to state, local, and Tribal governments, and non-profit institutions, specifically community development financial institutions (CDFIs) and green banks, especially in low-income and disadvantaged communities (LIDACs).

The U.S. Environmental Protection Agency (EPA) is responsible for distributing the GGRF funds and has created three competitions to strategically target its investment:

1. **The National Clean Investment Fund (NCIF)** will deploy USD 14 billion to partner with private capital providers to deliver accessible and affordable financing at scale to businesses and communities for clean technology projects.
2. **The Clean Communities Investment Accelerator (CCIA)** will deploy USD 6 billion to rapidly build the clean financing capacity of specific networks of public, quasi-public and non-profit community lenders.
3. **The Solar for All competition** will provide a total of USD 7 billion via up to 60 grants to states, Tribal governments, municipalities, and nonprofits to expand the number of LIDACs with access to affordable, resilient, and clean solar energy.[3]

LIDACs, especially communities of color, are disproportionately vulnerable to the impacts of climate-related shocks such as heat waves and flooding, as well as poor air quality.[4] Communities of color are more likely to experience pre-existing and chronic stresses like poor health and living conditions than their white counterparts.[5] Redlining and other discriminatory housing policies have led to the concentration of low-income communities in areas more likely to experience extreme heat.[6] Low-income communities also have higher energy burdens, spending 8% of their income on energy compared to 2.3% for higher-income households, nationally.[7]

2 The initial grants will be disbursed in 2024, and all grant funds must be spent by 2031, although the CDFIs and green banks may continue to finance projects after initial grant funds are used.
3 EPA. 2023. "EPA's Implementation Framework for the Greenhouse Gas Reduction Fund." EPA's Implementation Framework for the Greenhouse Gas Reduction Fund. https://www.epa.gov/system/files/documents/2023-04/GGRF%20Implementation%20Framework_730am.pdf.
4 EPA. 2021. "Climate Change and Social Vulnerability in the United States." https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf.
5 Rudolph, Linda et al. . "Climate Change, Health, and Equity: A Guide for Local Health Departments." American Public Health Association. https://www.apha.org/-/media/files/pdf/topics/climate/climate_health_equity.ashx.
6 Tan, Yu Ann. 2021. "Investing in Healthier Low-Income Housing." RMI. https://rmi.org/investing-in-healthier-low-income-housing/.
7 Drehobl, Ariel, et al. . 2020. "How High are Household Energy Burdens: An Assessment of National and Metropolitan Energy Burden across the United States." American Council for an Energy-Efficient Economy. https://www.aceee.org/sites/default/files/pdfs/u2006.pdf.

Climate-related shocks and stresses are exacerbated by historical existing natural- and human-induced burdens in LIDACs, especially as populations in these communities grow. Climate-related funding without strategic consideration of income, geographic, and racial disparities is likely to replicate or even increase wealth and prosperity gaps, and may result in suboptimal emissions reductions and resilience-building. The historic funding opportunities presented by the IRA, including the GGRF, the Infrastructure Investment and Jobs Act (IIJA, 2021) and the Justice40 Initiative,[8] stand to be the largest investments to date in climate and environmental justice programs and transitions for LIDACs. This creates an opportunity to use climate resilience efforts to kickstart policies and practices that help to redress inequities, build capacity, and enhance the wealth and financial security of LIDACs. It is important to invest in efforts that respond to community needs and to protect investments in emissions reduction from becoming another mechanism for disenfranchisement.[9] Due to their existing specialized role and position of trust in both their communities and the financial sector, CDFIs and green banks are a critical vehicle for delivering these benefits and protections for LIDACs.

A number of coalitions formed to apply to the GGRF and deploy funding to advance to program's dual objectives of emissions reduction and equity. These coalitions represent a diversity of perspectives and institutions, including CDFIs, other community lenders, green banks, and nonprofits. Our interviews for this report made clear that GGRF applicants effectively synthesized knowledge and experiences of actors across regions and sectors. While the winners of the competition will not be known until March 2024 at the earliest, the application process itself has demonstrated a strong spirit of collaboration amongst organizations focused on economic development and climate justice in the United States.

Climate Policy Initiative (CPI) has undertaken this project to identify the challenges to implementing the GGRF and potential ecosystem-level solutions that can unlock the transformative potential of its grants. There are many perspectives among GGRF applicants, CDFIs, green banks, commercial financial institutions, ecosystem stakeholders, etc. as to how GGRF funds can be best spent, and successful implementation will require coordination, replication of best practices, and knowledge sharing among them. We identified a need for an independent perspective outlining ways to enable and optimize the entire GGRF ecosystem.

In August 2023, CPI released a report quantifying the investment needs of LIDACs at the census tract level for the GGRF's three priority project categories: distributed energy generation and storage, net zero emissions buildings, and zero emissions transportation.[10] The report also analyzed how these needs compare to existing climate finance flows in the U.S. and included an initial analysis of how TA could address barriers and enable more impactful GGRF implementation.

Building on our previous analysis, the current report identifies barriers and solutions to achieving a transformative vision of the GGRF, whereby its grants achieve an outsized impact and help accelerate a just and resilient transition for LIDACs. To achieve this, we conducted

8 The Justice40 Initiative sets the goal that 40% of the overall benefits of certain Federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution. The White House. 2022. "Delivering Historic and Long Overdue Investments in Disadvantaged Communities." https://www.whitehouse.gov/omb/briefing-room/2022/05/23/delivering-historic-and-long-overdue-investments-in-disadvantaged-communities/.

9 Donoghoe, Manaan and Perry, Andre M. 2023. "The case for climate reparations in the United States." The Brookings Institutions. https://www.brookings.edu/articles/the-case-for-climate-reparations-in-the-united-states/.

10 Grant, Chris et al. 2023. Implementing the Greenhouse Gas Reduction Fund: Investment needs, barriers, and opportunities Climate Policy Initiative.

19 interviews, speaking with a range of CCIA and NCIF applicants, CDFIs, green banks, and other expert stakeholders, in addition to conducting further desk research.

The report is laid out as follows: First, we will lay out the GGRF's transformative potential, then we will outline some of the key challenges to GGRF implementation. From there, the report will focus on key actions to realize the GGRF's transformative potential, diving into our five pillars of action: catalyze private capital at scale; standardize definitions, products, and underwriting; coordinate and target technical assistance; increase alignment of government efforts at all levels; and create a sandbox culture of collaboration and learning.

1.2 THE GGRF'S POTENTIAL

The GGRF has the potential not only to reduce GHG emissions, but also to accelerate progress towards climate justice, build climate resilience, and provide a catalyst for broader economic development for LIDACs. In the U.S., climate justice requires that the benefits of the energy transition flow to communities that have been most impacted by climate change, and that have been deprived of a proportionate share of the country's historical economic growth.

Throughout our interviews, **stakeholders emphasized that by aligning actors across the community development, climate mitigation and resilience, and financial sectors (as outlined in the annex), the GGRF could help establish a virtuous cycle that increases the wealth and resilience of LIDACs while reducing GHG emissions**. When deployed alongside additional technical assistance (TA), community outreach, and coordinated resources for community development, investment in emissions reduction technologies can jumpstart a variety of benefits for LIDACs that go beyond the GGRF's emissions reduction mandate. Such benefits include the cost savings that renewable energy, building electrification, and electrified transport can bring. In addition, the demand for labor and local expertise to build and install clean technologies can boost job creation and revitalize local job markets, thereby promoting wealth creation and economic mobility. There are also various health benefits associated with air quality from electrification and renewable energy production.[11]

To achieve this potential, the GGRF must crowd in large volumes of private capital in LIDACs while embedding project design and lending principles that bolster broader holistic resilience. While the GGRF represents a substantial increase in federal support for these communities, the funds pale in comparison to the USD 2.8 trillion in climate finance that LIDACs need through 2035 under a national pathway to net zero GHG emissions by 2050.[12] Fortunately, by channeling federal funds through CDFIs and green banks, the GGRF can expand the scale and capacity of these institutions and deepen their connections to traditional financial institutions and markets. This could increase access to finance in LIDACs and thereby become a significant contributor to their economic and community development.

11 RMI. 2021. "Eight Benefits of Building Electrification for Households, Communities, and Climate." https://rmi.org/eight-benefits-of-building-electrification-for-households-communities-and-climate/

12 Climate Policy Initiative. 2024. "CPI GGRF Investment Needs." https://cpiglobal.maps.arcgis.com/home/item.html?id=5d3be8d16d6941009979417864d4d9ae. These data are an update to CPI's August 2023 Interim Report, which contains a full description of the methodology. See: Grant, Chris et al. 2023. "Implementing the Greenhouse Gas Reduction Fund: Investment needs, barriers, and opportunities." Climate Policy Initiative. https://www.climatepolicyinitiative.org/wp-content/uploads/2023/08/CPI-Implementing-GGRF-Interim-Report-August-2023.pdf.

However, our stakeholder interviews highlighted several institutional, financial, and operational challenges that could impair the GGRF's ability to simultaneously reduce emissions, enhance resilience, and deliver broader community development and economic benefits to LIDACs. We detail these in the next section before outlining potential solutions in Section 3.

2. CHALLENGES FACED BY THE GGRF

Our interim report on GGRF implementation outlined several barriers to financing climate-related projects in LIDACs. Since then, further research and stakeholder interviews have identified more specific challenges to be overcome to enable the GGRF to reach its potential. Recognizing that the coalitions of intermediaries that have applied for GGRF funds have done tremendous work to prepare for the awards, our barrier analysis focuses on the gaps in capacity and resources between these coalitions, and between GGRF applicants and the other actors that must contribute to the program's success, including the more localized investment ecosystem. We describe these ecosystem-level challenges below, before proposing a framework to address them in the subsequent section.

- **The pace of GGRF implementation and disbursement of funds, as well as the specific project typologies, risks leaving behind the most disadvantaged communities.** There is a short runway to prepare institutions and the larger community development ecosystem to receive GGRF funds, given that the request for applications was made in the summer of 2023, with initial fund disbursement anticipated in the summer of 2024. Many stakeholders expressed concern that the urgency created by this tight timeframe may cause funding to flow to larger, better-resourced markets instead of others with lower capacity and less historical access to finance, especially rural and Tribal communities. This creates a near-term need to reinforce the capacity of GGRF intermediaries and other stakeholders in such communities, as well as for deliberate planning throughout the GGRF ecosystem to earmark sufficient resources for their use.
- **CDFIs have varying operational capacity and energy, climate, and resilience-framed underwriting experience, leading to differences in their ability to absorb GGRF funds.** CDFIs are unique in their already existing engagement and impact in LIDACs, but vary greatly in terms of staffing resources, balance sheet capacity, and experience of lending in GGRF priority project categories. For some larger CDFIs, a USD 10 million GGRF grant[13] would represent only a modest increase in lending capacity, while others may struggle to absorb that amount. Operational and personnel constraints may reduce smaller Native and rural CDFIs' ability to participate in programs with significant administrative overheads, and may limit their ability to adjust to new lending products or underwriting standards related to new project typologies. An uneven ecosystem in which some CDFIs are unprepared to absorb GGRF capital may inadvertently sideline them (and their inherently marginalized service-area communities) from the process. This creates concerns that funding could miss some of the communities most impacted by climate change.
- **Green banks have uneven experience of lending in LIDACs, and may need TA and other support to scale investments in these communities.** Green banks generally have not focused on LIDAC lending, though this is not the case for all. In 2022, about a quarter of aggregate green bank financing flowed to LIDACs; however, the share of individual banks'

13 USD 10 million is the maximum amount any CDFI can receive from a GGRF applicant, per the Notice of Funding Opportunity.

total investments ranged from 23% to 93%.[14] As the GGRF expects at least 40% of funds in aggregate to flow to LIDACs, many stakeholders we interviewed noted that green banks will need to adjust their lending patterns.

- **Among a wide range of systemwide hurdles to GGRF implementation, workforce capacity and uneven pipeline development are particularly significant.** One of the most commonly cited barriers found during our research was the lack of skilled project managers and technicians to implement GGRF projects. While workforce capacity for GGRF priority technologies is constrained across all of the U.S.,[15] it is particularly limited in LIDACs. In addition to delaying GGRF project implementation, this may hinder the achievement of GGRF job and workforce creation targets in LIDACs, as well as gaps in the larger ecosystem surrounding the various projects and their related co-benefits that are both industry-building and systems-changing.
- **Another hurdle is project pipeline development.** Our research indicates an uneven pipeline of early-stage projects (i.e., those that are yet to reach financial close) across regions and project types. In some communities, high upfront costs and limited pre-development financing may constrain pipelines. Communities with fewer "shovel-ready" projects may be less able to access GGRF funds than those with more robust pipelines, potentially reinforcing inequalities. It was noted by our interviewees that the project pipeline is affected by the availability of an appropriately trained workforce and the existing climate finance gaps in these communities.
- **The large number of diverse stakeholders in the GGRF ecosystem creates challenges for coordination and systemic learning.** The GGRF ecosystem comprises many diverse types of actors with varying organizational cultures, missions, constituencies, and capacities (see the Annex). These range from the federal government and major financial institutions to small-to-medium CDFIs (including loan funds, banks, credit unions, and venture capital firms) and the necessary builders and contractors in LIDACs. These stakeholders bring different sets of relevant but not necessarily overlapping competencies. While this diversity of actors extends the potential reach of the GGRF, it also creates challenges for coordination and for sharing best practices across the entire ecosystem. Accordingly, many stakeholders interviewed fear a fragmentation of efforts.

14 American Green Bank Consortium and Coalition for Green Capital. 2023. "Green Banks in the United States: 2022 U.S. Green Bank Annual Industry Report With Data from Calendar Year 2021 and 2022." https://mcusercontent.com/3e3337737c870aa879b2ef144/files/58657110-26b4-3ee5-a3e4-45fda1bb6594/CGC_Consortium_AnnualReport.01.pdf.
15 Associated Builders and Contractors. 2023. "Construction Workforce Shortage Tops Half a Million in 2023, Says ABC." https://www.abc.org/News-Media/News-Releases/construction-workforce-shortage-tops-half-a-million-in-2023-says-abc.

3. ACTIONS TO ACHIEVE A TRANSFORMATIVE VISION FOR THE GGRF

Based on our analysis of the key challenges faced by the GGRF summarized above, we have identified five areas of action to help ensure that the GGRF accelerates climate justice and equitable resilience in the United States. By using its USD 27 billion in grants to catalyze multipliers of investment, the GGRF can play a role in transforming the broader CDFI and green bank industries to serve their communities more effectively. The actions prioritized to achieve this are:

1. **Catalyze private capital at scale**
2. **Standardize definitions, products, and underwriting**
3. **Coordinate and target technical assistance**
4. **Enhance alignment of government efforts at all levels**
5. **Create a sandbox culture of collaboration and learning**

3.1 CATALYZE PRIVATE CAPITAL AT SCALE

In order to accelerate climate justice in the U.S., GGRF funds must catalyze larger volumes of private and public climate funding and finance for LIDACs. As demonstrated in our interim report on GGRF investment needs, GGRF funds alone are not nearly sufficient to meet LIDACs' investment needs in its priority project categories.[16] McKinsey estimates that the GGRF, through a combination of balance sheet leverage, capital recycling, and private (and public) finance mobilization, could leverage up to 12 times the CCIA and NCIF's initial capitalization of USD 20 billion.[17] Accordingly, direct deployment of all GGRF funds as loans to project sponsors would mean missing out on opportunities to catalyze much more investment. Although the repayment of such GGRF loans would allow intermediaries to "recycle" funds to some extent by issuing new lending as the initial loans were repaid, the pace of this recycling would be too slow to realize the GGRF's full potential.

Fostering the use of secondary loan markets, blended finance structures, and expanding the balance sheets of CDFIs can all help to enhance the effectiveness and impact of GGRF funds. These measures, described below, will require coordination between the GGRF ecosystem, in particular CDFIs, green banks, and the private sector. Winning GGRF coalitions, other federal government agencies, private finance industry associations, and philanthropy are all well suited to lead in facilitating the partnerships needed to develop these financial structures.

16 Grant, Chris et al. 2023. "Implementing the Greenhouse Gas Reduction Fund: Investment needs, barriers, and opportunities." Climate Policy Initiative. https://www.climatepolicyinitiative.org/wp-content/uploads/2023/08/CPI-Implementing-GGRF-Interim-Report-August-2023.pdf.
17 Buehler, Kevin et al. 2023. "Delivering impact from US green bank financing." McKinsey & Company. https://www.mckinsey.com/capabilities/sustainability/our-insights/delivering-impact-from-us-green-bank-financing.

Figure 1. Five recommended actions to achieve GGRF potential

Creating a more robust secondary market for GGRF-supported loans could enable more rapid recycling and leveraging of public funds. With a more active secondary market, CDFIs and green banks could originate loans for GGRF priority projects in LIDACs and then sell these loans (in part or their entirety) to commercial investors. This would enable GGRF intermediaries to quickly redeploy funds as additional loans, without waiting for repayment. Although a secondary market for CDFI loans does exist – facilitated by bundlers such as Scale Link – our research found that participation in this market is limited among CDFIs, commercial lenders, and investors. Both CDFIs and commercial investors may require outreach to raise awareness of the benefits of such transactions, and secondary markets will need to be structured to reflect CDFIs' and green banks' interest in building their balance sheets to attract further investment and in tracking these entities' impact. Additionally, they will need to align their varying lending products and target clients, including certified CDFIs loan funds, banks, credit unions, and venture capital firms.

A centralized marketplace for GGRF-supported loans could increase secondary market turnover. This would provide originators of GGRF-supported loans with a single point of entry to find potential buyers. It could also economize their use of GGRF funds by having buyers bid on the amount of credit enhancement needed. Such a marketplace could help increase awareness of the benefits of secondary market sales among CDFIs and increase the speed at which commercial arrangers and investors can acquire credit-enhanced loans. A centralized system could also enable greater transparency over the use of GGRF funds.

Using GGRF funds as the concessional component of blended finance structures may enable crowding in of more private capital. Instead of using GGRF awards to directly fund loans, using this public capital to de-risk or enhance the returns of loans to GGRF-supported projects in LIDACs could attract larger inflows of private capital. In particular, using GGRF funds to mitigate the high perceived credit risk of borrowers in LIDACs could help break down a major barrier to commercial lending faced by these communities. GGRF funds can also be used in coordination with other federal, state, and local public funding sources, including through grant programs, no- and low-cost loans, and loan guarantees, which are sometimes required to make these projects viable.

There are several ways that GGRF funds could be deployed to crowd in private capital, and CPI has identified three major categories:

- **Guarantee funds:** GGRF funds could be used to guarantee the repayment of loans for eligible and enhanced projects, reducing perceived risks for private investors and allowing the loans to be sold in the secondary market at a lower price. An existing example of this approach is the Community Investment Guarantee Pool, which guarantees loans to small businesses, affordable housing projects, and climate solutions using philanthropic capital, treating called guarantees as grants.
- **Loan loss reserve pools:** GGRF funds could be used to absorb losses on eligible loans or loan pools up to a predetermined amount, reducing risks for senior commercial lenders contributing capital to the loans. These structures are a common CDFI risk mitigation practice, and a set of enhanced versions or pools to facilitate this function more broadly could encourage investment and de-risk transactions.
- **Securitization vehicles:** In structures where many GGRF-supported loans are sold from originators (CDFIs or green banks) into a securitization vehicle, the GGRF could be used to fund the equity or other high-risk tranches sold by the vehicle. Lower-risk tranches could then be sold to commercial investors.

GGRF funds could also allow CDFIs to expand their balance sheets by supplementing their own loss-absorbing capital. A larger capital base should increase CDFIs' creditworthiness and therefore allow them to increase borrowings to fund GGRF-supported loans. This may be particularly applicable in situations where GGRF intermediaries identify needs for eligible loans that are poor candidates for blended finance structures due to unique risk or repayment profiles. However, GGRF intermediaries would need to maintain appropriate controls and documentation processes to ensure that funds used in this manner do not support ineligible projects.

3.2 STANDARDIZE DEFINITIONS, PRODUCTS, AND UNDERWRITING

To enable the above-mentioned financing structures and rapidly scale lending, the GGRF can encourage the development of a framework for shared underwriting standards, definitions, and processes. This would enable CDFIs and green banks to deploy large amounts of capital quickly in a coordinated manner, avoiding costly duplication. Such a framework would also contribute to the development of green lending in LIDACs as an asset class. By leading on standardization, green banks and CDFIs can bring along mainstream banks and investors and ensure that the interests of local communities are represented. Such standardization could be accelerated by including CDFI networks and alliances, some of which are participating in GGRF applicant coalitions or operating certified CDFIs themselves.

To maximize impact, standardization should be ecosystem-wide and avoid fragmentation across different GGRF coalitions. At the ecosystem level, standardization must include a wide range of perspectives including those of green banks, CDFIs, private financial institutions, government agencies, and local communities, among others described in the Annex. These efforts should be updated and reiterated as needed, and made widely available and publicized to the entire industry, so that all can take advantage of the resources. This effort to include the ecosystem should therefore extend to engagement with financial regulators, utilities, government (local, tribal, state) policy and procurement offices, and more broadly to the building, development and land use sectors and their representatives. As discussed below, achieving this standardization will take the efforts of the entire ecosystem, and larger organizations such as the EPA, applicant coalitions, private financial institutions, and philanthropies can take the lead on coordinating and gathering inputs. Specific solutions that can increase the pace and scale of GGRF-supported lending and enable greater involvement by private investors include:

- **Develop standard definitions for key climate and development terminology.** Definitions should be commonly agreed upon and consistent with principles of climate justice and resilience, while also leaving room for regional, cultural, and sectoral differences. Multiple stakeholders interviewed for this research mentioned confusion over the specific definitions used by different entities for terms such as net zero, climate resilience, and LIDACs. These differences are especially impactful when they relate to program or funding criteria, and result in CDFIs and green banks needing to rewrite applications, keep track of multiple data points, and may even render them ineligible for certain incentives. This becomes particularly important if CDFIs, green banks, and their partners look to leverage capital from state agencies, impact investors, philanthropy, and mainstream banks, among others. Federal agencies and GGRF coalitions should identify potential discrepancies in definitions soon, to allow time to coordinate with the entire ecosystem in developing definitions that meet a wide variety of needs and perspectives.
- **Develop standardized financial products, term sheets, and use cases to encourage replication, reduce costly duplication of efforts, and alleviate capacity constraints.** While these materials are technically complicated, they are easily replicable across geographies and projects. Such replication could significantly ease the administrative burdens for small intermediaries associated with issuing GGRF loans and ease these loans' transition to secondary market offerings. This standardization effort, which can be led by the GGRF coalitions as they will already be coordinating and supporting a wide range of CDFIs and green banks, should also include a description of relevant use cases and possible differentiators depending on jurisdiction, geography, and project partners. The Native CDFI movement is an example of where such standardization has been implemented successfully, by providing core training, hands-on TA, and technical documents such as term sheets, while also maintaining the ability to incorporate local conditions, context, and culture in a CDFI's practices. This is especially important for Native CDFIs, which face specific operational and legal challenges regarding funding streams and collateral on Tribal lands.
- **Develop standard underwriting criteria to enable aggregation of invested projects.** To encourage scalable lending that can be easily securitized, GGRF recipients should outline standardized underwriting criteria that CDFIs can use to measure project risk. This will be especially valuable for CDFIs with capacity constraints, or those who intend to lend to project categories outside of their current portfolios. These criteria may also allow for the assessment (not necessarily screening or scoring) of co-benefits, and for "resilience value engineering" that can deepen the impact of invested projects over the long term. Provision of principles, checklists, and tools that enable project aggregation will also influence the review and reporting processes noted in the following bullet.

- **Standardize funding application and review processes and reporting requirements so applicants have a clear understanding of resources needed and eligibility.** CDFIs with limited capacity will be unable to submit applications to multiple GGRF awardees and other government programs, especially if they do not have pre-existing relationships with them or an understanding of their eligibility and competitiveness. GGRF awardees should standardize and align their application processes by including related questions and publishing scoring rubrics in advance. It will also be easier for CDFIs to participate in multiple GGRF-related programs if the reporting expectations are similar, including around the use of funds, project details, and impact metrics.

Innovative and novel approaches should be reserved for deals that are truly first-of-a-kind, with an eye towards replication and identifying best practices. Once best practices are identified and effective systems have been developed, the industry should move to standardize and scale processes efficiently. Innovative approaches, and the effort and resources they require, can then be focused on solutions that need them, such as for new technologies or financing structures that seek to solve a problem that the standardized approach cannot. Practitioners should structure these innovative efforts to quickly learn what does and does not work, iterate on the successful efforts, and replicate and scale the effective approaches.

3.3 COORDINATE AND TARGET TECHNICAL ASSISTANCE

As the GGRF and its associated financing structures will increase the volume and speed of capital delivery, coordinated and targeted TA will be needed to ensure that the most disadvantaged communities are not left behind. TA on key GGRF-related topics, including underwriting for GGRF priority categories, operational capacity development, climate tech, climate justice, and lending to LIDACs, will need to be delivered in a coordinated way. This should prioritize community and institutional readiness, and access for the most disadvantaged communities. TA will likely be required on a variety of levels, including for lenders, communities, and projects, and should be structured according to the needs of each recipient group.

A hub-and-spoke TA framework would allow for centralized support at the national level, while providing specialized support regionally and thematically. Our research found a need for both centralized TA services, as well as support for differentiated approaches across regions, sectors, and lender types. A hub-and-spoke TA model could balance between the need for a centralized resource repository and the need for bespoke TA for specific CDFIs and green banks. The centralized hub would cover national-level TA, including a resource hub with toolkits, examples of forms/processes, checklists, etc. The spokes could then focus on specific regions or themes (such as community lender types, markets served, etc.) to provide targeted assistance. Regional or thematic spokes could provide individualized support, while also matchmaking organizations facing similar challenges. A comprehensive hub-and-spoke model would allow TA to cover a larger swathe of the ecosystem actors and needs.

Any resource hubs or TA facilities need to be adequately staffed and supported, in order to ensure that resources are adapted to client needs, accessible, and adopted. If the TA facility lacks adequate financial support, there is a risk that its resources will not be updated regularly or disseminated proactively to CDFIs and green banks implementing the GGRF. In light of this, GGRF coalitions and philanthropies have an opportunity to partner on adequately scoping and resourcing the hub-and-spoke TA model, to maximize the utility of a TA hub and reduce duplicative efforts. A relevant example of this kind of model is the Native CDFI training and TA program begun in 2003 by the U.S. Treasury CDFI Fund. This program developed "train the trainers" and national-to-local training, as well as TA programs with the goal of expanding the number of Native CDFIs while providing standardized documents, processes, and instruction.

Philanthropy will play a key role in filling any gaps in funding needed to create an enabling environment that cannot be filled by GGRF TA allocations. Many respondents noted that the GGRF TA allocations (outlined in the request for applications) are limited compared to the vast requirements to ensure that CDFIs and green banks have the necessary absorptive capacity and that local workforces in LIDACs have the necessary skills to implement GGRF projects. Additionally, GGRF TA funds will not be available until late 2024, leaving a timing lag that could affect the overall program. This creates a large role for philanthropy to play in bridging the gap, both by funding TA prior to GGRF disbursement, and by supplementing GGRF-funded TA later on.

Some foundations and private corporations have strong track records of supporting CDFIs at various stages of their development. This has typically been in the form of TA and training, grant funding for operations, as well as grants and low-interest investments to grow lending capacity and investment capital. Combined with federal grants and low-interest loans, such philanthropic support has been key to CDFI growth, and has similar potential to support successful GGRF implementation.

There are several critical areas where philanthropic support might be most impactful:

- **Workforce development:** Our interviewees frequently noted a lack of workforce in the U.S. to install GGRF priority technologies. Philanthropies could fund national-level or regional workforce development organizations to grow the number of certified contractors by providing small business support, and to upskill the workforce that those contractors will hire to implement projects. It is important that this workforce development happens in LIDACs, so that the wealth created by GGRF stays within these communities.

- **De-risking newer models, building proof of concept, and pre-development support:** Philanthropies can target key regions and technology areas that may be seen as too risky for other actors to support. They can do so through program-related investments, including grants, results-based finance, and forgivable loans to de-risk projects and bolster pipelines where pre-development or risk-tolerant capital is scarce. This will be particularly important in the run-up to GGRF disbursement, in order to support proof of concept of new project types and underwriting for those projects.

- **Policy support:** Interviewees frequently noted that local-level regulations (e.g., zoning codes) and legislation (e.g. local tax credits for clean technologies) will likely have a material effect on the success of the GGRF (and the IRA and IIJA more broadly). Philanthropies can support jurisdictions in implementing enabling regulations or legislation to increase the impact of GGRF funds in specific sectors, or where current regulations are likely to pose a barrier.

In addition to TA, GGRF coalitions should earmark a portion of their resources for the most disadvantaged communities, beyond the 40% LIDAC floor set by the GGRF. Creating specific windows or targets for Native, rural, and Islander communities can help ensure that funds flow to community lenders with less capacity to engage with GGRF coalitions and to submit multiple applications to receive funding from these coalitions, etc. Many federal programs have successfully included this approach, including the USDA Powering Affordable Clean Energy (PACE) Program which earmarked 30% of finance for Tribes and Island territories.[18] To complement the earmarking, successful GGRF coalitions could also waive certain requirements in these communities, such as for co-financing, in recognition of their unique challenges in accessing finance.

3.4 ENHANCE ALIGNMENT OF GOVERNMENT EFFORTS AT ALL LEVELS

Intra- and inter-government coordination is needed to focus efforts to accelerate climate justice and to more effectively use government resources. At the federal level, there is now a plethora of funding and programmatic opportunities for climate, resilience, and community development, especially with the passage of the IRA (2022), IIJA (2021), CHIPS and Science Act (2022), and the Community Disaster Resilience Zones Act (2022).[19] Additionally, in 2023, the White House released the National Climate Resilience Framework,[20] which provides additional guidance and further funding announcements that align with GGRF. Likewise, at the state and local level, many jurisdictions are expanding and starting new climate programs.

Despite this, many government agencies are not aware of opportunities offered by other agencies or levels of government, and do not align on timelines, priorities, definitions, permitting, or application processes. This balkanization makes it challenging for GGRF applicants to create a unified implementation strategy, increasing the cost of accessing funds and participating in programs. CDFIs and smaller, marginalized communities more generally, with lower capacity are most likely to be impacted as they do not have sufficient resources or access to external support to help them navigate the process.

The GGRF can facilitate alignment across government actors by supporting: local capacity building; incentive alignment; models for cooperation and coordination within government and with non-governmental GGRF stakeholders. This alignment will become particularly important as GGRF funds flow to various successful applicants and further to the delivery of capital and TA for specific projects, especially for those LIDACs who are unaccustomed to the funding and project typologies.

- **Support is needed for local governments to improve permitting processes and facilitate project development.** Local permitting departments face their own capacity constraints, and many land use and building regulations were not developed with the climate crisis in mind. For the GGRF to succeed, local governments will need capacity support to

18 United States Department of Agriculture. 2023. "Powering Affordable Clean Energy PACE Program." https://www.rd.usda.gov/programs-services/electric-programs/powering-affordable-clean-energy-pace-program.
19 Federal Emergency Management Agency. 2023. "Community Disaster Resilience Zones." https://www.fema.gov/partnerships/community-disaster-resilience-zones.
20 The White House. 2023. "National Climate Resilience Framework." https://www.whitehouse.gov/wp-content/uploads/2023/09/National-Climate-Resilience-Framework-FINAL.pdf.

process projects more quickly and consistently. This support can take multiple forms, including for process changes such as consolidating permitting authority within a single office or aligning permitting efforts and timelines between different local government departments.[21] It can also include designing permitting tools that enable standardized approval processes,[22] or regulatory changes and rezonings to enable by-right approval of certain projects. Proactive engagement with communities can help to identify forthcoming projects and any potential challenges or objections.

- **Federal, state, and local government incentives should be layered to make project development easier and expand the impact of each incentive.** Interviewees said that they were overwhelmed by the number of incentives available for low-carbon solutions, adding that these incentives are not always structured in a way that makes them as effective as possible and easy to access. This includes different timelines for support, varying definitions of terms such as LIDAC or climate resilience, and technical requirements. For projects that require a range of funding sources, this lack of alignment leads to delays and added costs. If incentive programs are aligned and coordinated, each dollar can mobilize multiples of other public sources and private investment, expanding a program's impact and accelerating the transition. The GGRF can be a focus for this alignment by bringing together government agencies at all levels with CDFIs, private financial institutions, civil society groups, and others, including for alignment between the NCIF, CCIA, and Solar for All. Outside of specific funding streams, non-funding initiatives such as the Community Disaster Resilience Zones platform can help to focus financial and non-financial efforts on priority regions and sectors.[23]

- **Other agencies within the federal government should identify how their programs relate to the GGRF and develop a model for cooperation and coordination.** In addition to broadly working towards the same goals, many government agencies provide funding to LIDACs in GGRF priority areas, such as affordable housing and renewable energy, and many agencies have developed detailed databases to navigate all of the various funding opportunities, such as the Department for Housing and Urban Development's Funding Navigator.[24] Financial regulators, including the Federal Housing Finance Agency given its role in mortgage markets, could also consider how to align regulatory approaches with the goals of the GGRF while continuing to safeguard financial stability. To maximize the impact of each government action, align priorities, and reduce duplicated efforts, government agencies should coordinate their funding and programs. An interagency convening or working group could highlight these programs and promote coordination.

  One example of this is the White House Council on Native American Affairs, which is an interagency network for Tribal-federal engagement. This council's committees on climate change, Tribal homelands and treaties, as well as economic development, energy, and infrastructure provide possible venues for coordination on GGRF-related opportunities for Native communities. The federal government has created forums for

21 Bird, Lori and McLaughlin, Katrina. 2023. "US Clean Energy Goals Hinge on Faster Permitting." World Resources Institute. https://www.wri.org/insights/clean-energy-permitting-reform-us. Local governments may be able to take advantage of federal funding to facilitate their permitting efforts. See, for example, USD 760 million in the Inflation Reduction Act to facilitate the siting and permitting of certain energy projects. See: United States Department of Energy Grid Deployment Office, 2023. "Transmission Siting and Economic Development Grants Program." https://www.energy.gov/gdo/transmission-siting-and-economic-development-grants-program.
22 National Renewable Energy Laboratory. 2023. "SolarAPP+." https://solarapp.nrel.gov/.
23 Federal Emergency Management Agency. 2023. "Community Disaster Resilience Zones." https://www.fema.gov/partnerships/community-disaster-resilience-zones.
24 HUD Exchange. 2023. "Now Available: Funding Navigator Tool." https://www.hudexchange.info/news/funding-navigator-tool/.

such discussions at a high level, for example through the Federal Interagency Thriving Communities Network,[25] as well as more specific working groups such as the Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization.[26] Establishing a GGRF-specific forum should also be prioritized by policymakers and government agencies.

Another example of a whole-of-government approach that the GGRF could support, and be supported by, is the newly introduced National Coordination on Adaptation and Resilience for Security Act legislation, which if passed would establish:

- A National Adaptation and Resilience Strategy and Implementation Plan with federal, state, local, private sector, and non-profit partners;
- A Chief Resilience Officer in the White House to implement the plan;
- Interagency working groups to streamline efforts and ensure accountability; and
- A federal information hub to streamline resilience resources for communities.

The GGRF could use these resources and the best practices identified by the Chief Resilience Officer and working groups, and at the same time coalitions, CDFIs, green banks, and implementation partners could pilot innovative resilience financing measures and share findings with the federal hub.

- **Governments should include local community and CDFI voices in collaboration efforts to ensure all voices are heard and none are left behind.** The GGRF can be a focal point that brings all actors to the table, establishes priorities and best practices, and disperses information to the broader GGRF ecosystem, all of which can accelerate project implementation. One mechanism for facilitating this could be a working group or sub-committee within a relevant federal government body focused on implementing the GGRF. Philanthropies can help ensure that local communities are aware of such opportunities to provide input, that they have the technical guidance to make their input as valuable as possible, and are coordinated and aligned before these opportunities arise.

3.5 CREATE A SANDBOX CULTURE OF COLLABORATION AND LEARNING

Creating a sandbox culture of collaboration and learning around the GGRF would allow for real-time learning, help to avoid costs of duplication, and enable speed – particularly in the early implementation stages. Collaboration is a key lever of our vision for the GGRF's impact, facilitating the crowding in of additional capital, standardization efforts, delivery of coordinated TA, and alignment of government incentives. Collaboration and learning structures can harness the momentum of the collaboration kickstarted by the GGRF application process, looping in additional actors and formalizing ad-hoc collaboration and conversations.

25 United States Department of Transportation. 2023. "Federal Interagency Thriving Communities Network." https://www.transportation.gov/federal-interagency-thriving-communities-network.
26 Interagency Working Group on Coal & Power Plant Communities & Economic Revitalization. 2023. "Background." https://energycommunities.gov/background/.

By implementing collaboration and learning structures from the beginning, actors involved in the GGRF can share lessons learned in real-time, allowing for rapid recalibration around best practices. This is critical given the rapidity with which GGRF-related lending needs to scale in order to reduce emissions in line with U.S. climate goals. Processes to ensure continuous improvement will be key, given the urgency of addressing the climate crisis.

Targeted convenings among GGRF stakeholders can help to break down silos and address key bottlenecks. A centralized learning hub can aggregate lessons learned from all actors in the GGRF ecosystem, disseminate best practices to these stakeholders, and communicate successes with the wider public. While the hub could be structured in a variety of ways, at its core it would compile data and amass lessons learned from all CCIA and NCIF coalitions, with a focus on sharing and replicating successful models and overcoming common challenges. Management of this hub by an external party that is not a member of any GGRF coalition and is experienced in managing a learning hub/agenda could ensure neutrality and balance. A well-resourced learning hub increases the likelihood that GGRF stakeholders will act in a coordinated way and have the information necessary to implement continuous improvement strategies. Key elements of this hub could include:

- **Thought leadership and lessons learned:** In the form of white papers, case studies, toolkits, webinars, workshops, knowledge briefs, and longer reports.
- **Storytelling and communicating GGRF impact:** The knowledge products developed by the learning hub could be translated into impact stories and other public outreach materials highlighting the impact of GGRF funds in LIDACs.
- **The learning hub could also act as a common platform to input data in a standardized format**, offering a vehicle for tracking the impacts of GGRF investments on mitigation, adaptation, equity, and resilience.

These are critical components, as disseminating appropriate messaging, backed by evidence and research, to the broader public is vital to reinforce the value of the GGRF, and to create larger buy-in for the energy transition in LIDACs.

For issues that share common challenges, innovation labs can provide targeted co-creation. Such labs, which source proposals for solutions to key barriers, such as the [Global Innovation Lab for Climate Finance](), bring together various actors facing similar challenges to learn from each other's experiences and expertise. These labs could cover a host of challenges/solutions, including but not limited to how to blend concessional and commercial capital in LIDACs, developing financing structures for new technologies, securitization, productization, or the development of shared underwriting standards and term sheets. By piloting innovative solutions that might otherwise be considered too risky, there is a possibility to coalesce on new approaches to these challenges.

Convenings can enhance collaboration by building a culture of transparency between actors, and by creating opportunities to align on shared goals and approaches to challenges. CPI sees the following as key areas that would benefit from convenings:

- **Collaboration and standardization across GGRF coalitions:** Bringing together coalitions working with NCIF and CCIA funds will be critical to continue ongoing relationships through structured engagement. Key areas of discussion may include the standardization efforts described in Section 3.2 and the interplay between NCIF and CCIA grantees.

The EPA, or the GGRF coalitions themselves, would be well-positioned to organize this and could consider structuring regular (monthly or quarterly) leadership coordination meetings, alongside other thematic and regional working groups.

- **Risk sharing between CDFIs, green banks, and traditional financial institutions:** Conversations on risk sharing will be critical to enable crowding in of private capital and the growth of secondary markets. Given that LIDACs are perceived as higher risk, entities will need to discuss who will bear which risks, and where scarce public dollars can have the highest impact on de-risking investment. This is also an opportunity to include members of the broader GGRF financial ecosystem in the discussion, including insurers. By including these organizations in the conversation from the beginning, CDFIs and green banks can identify ways to accurately identify and price project risks, embed resilience into projects, and gain financial benefits from reduced risk exposure through project design that incorporates climate adaptation measures.
- **Education on the opportunity of the GGRF for communities:** Organizations that play a critical role in the enabling environment for the GGRF (e.g., local nonprofits, community-based organizations, and academic institutions) could benefit from outreach and engagement on the potential impact of GGRF in their communities, as well as ways to partner on deals and delivery of TA.

Accountability frameworks outside of the EPA could support understanding of whether and how transformation is happening by tracking the disbursement of GGRF funds and their impacts. Given the GGRF's aim to increase investment in climate solutions in LIDACs, it is important that these communities have insights into where the GGRF funding is deployed and the impacts that the GGRF is having. An accountability/tracking framework, managed by an external party that has experience tracking climate finance flows and impact metrics, and is not part of any GGRF coalition, could track GGRF flows at the project level, including by variables such as lender type and region. Further, impact metrics focused on outcomes (e.g., jobs created, gigawatts of renewable energy added to the grid, and number of homes retrofitted with energy efficiency upgrades) could be tracked alongside financial flows, in line with reporting at the project level. Modalities for dissemination could include a dashboard or periodic data releases. Collating and publicizing this information can create external accountability on whether the GGRF is meeting its stated goals.

4. CONCLUSION

The GGRF presents an opportunity to enact transformational change to accelerate progress towards climate justice in the United States. This unprecedented funding has the potential to provide lasting benefits beyond fulfilling immediate emissions reduction investment needs, by helping to grow the CDFI and green bank ecosystem, accelerating community and economic development in LIDACs, and enhancing climate resilience in these communities.

Realizing such socioeconomic co-benefits will require the mobilization of additional private capital alongside the promised GGRF funds. To catalyze investment at scale and maximize its effectiveness, all stakeholders across the GGRF ecosystem will have to work together, including CDFIs; green banks; the EPA; federal, state, and local governments; the private sector including financial institutions, developers, insurers, etc.; local communities; philanthropies, and more.

Required actions range from enhancing the alignment of U.S. government agencies and initiatives working on climate justice; standardizing definitions and practices for GGRF financing; enhancing technical assistance to raise the capacity and efficacy of CDFIs and green banks working in LIDACs; and fostering a responsive and collaborative learning environment for GGRF disbursement.

To indicate the way forward, we have identified three first steps that actors in the GGRF ecosystem can undertake to move toward achieving its transformational potential. These actions will need to be focused and swift to have the greatest effect, given the short implementation timeline of the GGRF disbursement.

1. **Facilitate coordination:** After the announcement of the GGRF awardees, the EPA or other ecosystem actors could kick-start collaboration by convening these awardees and other key stakeholders to strategize on deploying funds in a complementary manner, and on creating structures for sustained coordination and knowledge sharing.

2. **Prepare communities for GGRF funds:** In the interim, communities need to be prepared to absorb the new funds. Market assessments for GGRF technologies in LIDACs should be conducted, whether by non-profits, green banks, or CDFIs, to assess key gaps in workforce development, suppliers, and project pipelines. This can help to identify the communities and technologies for which these challenges are most acute, helping to focus remedial action.

3. **Bolster the supporting ecosystem:** Given the importance of coordinated TA, learning, and accountability, the EPA and potential GGRF awardees should begin to scope which partners might be best placed to host the recommended hub & spoke TA facility, learning hub, and/or GGRF accountability platform.

In addition to these actions, which may require a shift in how organizations act and set priorities today, maximizing the GGRF's impact will require the ecosystem to act collaboratively, identify remaining gaps, track impact, and share lessons learned. Ecosystem leaders should initiate this collaboration before the EPA awards grants to ensure coalitions can hit the ground running.

If done successfully, the GGRF's USD 27 billion in grants will have an order of magnitude greater impact from which all communities in the U.S. can benefit for generations to come, especially those that have historically been marginalized.

ANNEX: GGRF ECOSYSTEM DESCRIPTION

GGRF implementation requires a diverse ecosystem of stakeholders, each playing a crucial role in addressing the climate crisis, while delivering lower energy costs and economic revitalization to U.S. communities that have been historically left behind. The collaboration and coordination of the stakeholders detailed below will be essential to achieve the GGRF's objectives and the transformative vision outlined in Section 3.

The below is a non-exhaustive list, and other participants in the GGRF ecosystem will include organizations such as local community groups and leaders; consultants who may fill the gaps while CDFIs, green banks, and local governments build capacity; unions; and workforce development groups and other training organizations such as community colleges and vocational schools.

KEY STAKEHOLDERS

Community Development Finance Institutions (CDFIs): CDFIs as defined by the Opportunity Finance Network are "lenders with a mission to provide fair, responsible financing to rural, urban, Native, and other communities that mainstream finance doesn't traditionally reach."[27] There are more than 1,000 CDFIs operating across all 50 states, providing access to financial products and services to households and businesses in LIDACs. The industry is expanding rapidly, with 37% growth in the number of CDFIs from 2019 to 2023.[28] CDFIs vary in size, with the largest being Suncoast Credit Union in Florida, with nearly USD 17 billion in assets.[29] CDFIs are often closest the financial institutions to local communities and can have an extensive understanding of customers' needs and the risks associated with credit and financing in their communities, making them uniquely positioned to invest in LIDACs through the GGRF.

Green banks: green banks, as defined by the Coalition for Green Capital, are "mission-driven institutions that use innovative financing to accelerate the transition to clean energy and fight climate change".[30] With operations in 28 states, including Washington, D.C., as well as Puerto Rico, green banks are strategically positioned to drive clean energy investment in LIDACs, potentially through funds delivered by the NCIF and CCIA programs. According to a 2023 report by the Coalition for Green Capital, between 2011 and 2023 green banks in the U.S. used USD 4.64 billion of their own funds to leverage USD 10.6 billion of private investment. Between 2021 and 2022, six states passed legislation for the establishment of green banks and green banks mobilized USD 7.9 billion of clean energy investment leveraging their own USD 2.3 billion of funds. Green banks have been successful in deploying a range of financial products to accelerate the development of projects in new markets, geographies, and technologies that otherwise would not be financed through commercial investors. The

27 Opportunity Finance Network. 2023. "What is a CDFI?" https://www.ofn.org/what-is-a-cdfi/.
28 Scott, Jacob et al. 2023. "Sizing the CDFI Market: Understanding Industry Growth." Federal Reserve Bank of New York. https://www.newyorkfed.org/medialibrary/media/newsevents/news/regional_outreach/2023/sizing-the-cdfi-market-understanding-industry-growth.
29 Scott, Jacob et al. 2023. "Sizing the CDFI Market: Understanding Industry Growth." Federal Reserve Bank of New York. https://www.newyorkfed.org/medialibrary/media/newsevents/news/regional_outreach/2023/sizing-the-cdfi-market-understanding-industry-growth.
30 Coalition for Green Capital. 2023. "What is a Green Bank." https://coalitionforgreencapital.com/what-is-a-green-bank/.

financing instruments include mechanisms such as credit enhancement, aggregation and warehousing, TA, co-financing, and platforms for knowledge and information sharing. By using relatively scarce public dollars to mobilize additional private investment, green banks may have an outsized impact in helping the U.S. achieve net zero emissions by 2050 as well as advancing climate justice and community development in the country.

U.S. Environmental Protection Agency (EPA): Under the IRA, the EPA has been authorized to implement the USD 27 billion GGRF funds. The EPA is responsible for issuing the Notices for Funding Opportunities, selecting the awardees for the three competitions, disbursing funds, and monitoring the implementation of the GGRF. Because the EPA sets the parameters for how the funds can be used, what is considered a priority technology, and other programmatic elements, the EPA's role in the success of the GGRF cannot be overstated. Many elements, such as how coalitions will collaborate, will be influenced by the EPA's leadership and how they approach the management of these awards.

Other Governmental Agencies: Several government agencies, including the EPA, will play crucial roles in implementing the GGRF. Together with the EPA, these agencies may be able to work together and align strategies to further drive the impacts of the GGRF. For example:

- The Department of Energy (DoE) is poised to support the GGRF by advancing clean energy technologies using grants, loan guarantees, and TA programs. Key areas of overlap with the GGRF include programs that seek to expand renewable energy in LIDACs, such as the DoE Communities LEAP (Local Energy Action Program), where the DoE matches selected low-income, energy-burdened communities with TA providers who assist them with clean energy and economic development planning.[31]
- The Department of Agriculture (USDA) has the potential to align GGRF resources towards sustainable agricultural practices, as well as programs targeting rural and Tribal communities. For instance, USDA PACE (Powering Affordable Clean Energy) is an IRA program to invest USD 1 billion in rural electrification. USDA Rural Development's Rural Utilities Service will forgive up to 60% of loans for renewable energy projects that use wind, solar, hydropower, and energy storage,[32] highlighting the linkages between USDA programming and GGRF.
- The Department of Housing and Urban Development (HUD) can support energy efficient GGRF-funded initiatives benefiting both residential and commercial buildings, particularly in low-income communities. There are key overlaps between GGRF and the Green and Resilient Retrofit Program, which is to disburse USD 2 billion in funding authorized by the IRA for direct loans and grants to projects in eligible HUD-assisted multifamily properties that improve energy or water efficiency, enhance indoor air quality, implement zero-emissions electricity generation, use low-emission building materials, energy storage, or building electrification strategies.[33]
- The Department of the Interior (DOI) manages public lands and resources, contributing to GGRF projects that reduce emissions from natural ecosystems and promote renewable energy development. For instance, the DOI plays a key role in the leasing of land needed

31 United States Department of Energy. 2023. "Communities LEAP (Local Energy Action Program)." https://www.energy.gov/communitiesLEAP/communities-leap.
32 United States Department of Agriculture. 2023. "Powering Affordable Clean Energy PACE Program." https://www.rd.usda.gov/programs-services/electric-programs/powering-affordable-clean-energy-pace-program.
33 U.S. Department of Housing and Urban Development. 2023. "The Green and Resilient Retrofit Program (GRRP)." https://www.hud.gov/GRRP.

for some energy projects, and also received USD 120 million from the IRA to rebuild areas of the National Wildlife Refuge System that were damaged by storms,[34] having overlap with the resiliency benefits from the GGRF.

- The Department of Treasury houses the CDFI Fund, which was established in 1994 to directly invest in and provide capacity-building support to CDFIs. The CDFI Fund also runs the New Markets Tax Credit Program, which provides tax credits to community development entities, which allows them to attract private sector capital, as well as its Native Initiatives, which provide financial assistance, TA, and training to Native CDFIs. Because of its unique focus and historic support of CDFIs, the CDFI Fund will continue to be an important partner for CDFIs as they implement the GGRF.

State and local governments: State and local governments, including municipalities and Tribal governments, play a critical role in GGRF implementation, particularly in project identification and pipeline development. They possess knowledge of their local communities' energy needs, infrastructure, environmental conditions, and development goals, making them well-positioned to identify and prioritize projects that align with GGRF goals. Local governments and municipalities can leverage their understanding of local conditions to develop a project pipeline that aligns with the community's social and economic goals, encompasses a range of clean energy initiatives, including renewable energy projects, energy efficiency retrofits, and sustainable transportation infrastructure. Their close relationships with community members enable them to facilitate community engagement, assist with early-stage project planning and outreach, and ensure that the identified projects align with the needs and priorities of the communities they serve. More concretely, in many sectors local governments will play a role in permitting and processing project applications, and enacting a regulatory framework that facilitates technological uptake.

Non-governmental organizations: Non-governmental organizations (NGOs), such as the Natural Resources Defense Council and RMI, comprise a significant portion of the ecosystem supporting GGRF, outside of government and the private sector. NGOs can act as intermediaries, connecting project developers and communities with sources of concessional capital, such as foundations, philanthropic organizations, and international development banks. Additionally, some NGOs actively support advocacy efforts, raising awareness about the GGRF, promoting its benefits, and engaging with policymakers to ensure its continued funding and effectiveness.

NGOs' involvement in mobilizing concessional capital expands the reach of the GGRF, enabling project developers to access financing that may not be readily available through traditional channels. Their TA empowers communities to effectively participate in the GGRF, ensuring that projects are designed, implemented, and maintained to the highest standards. Furthermore, NGOs' advocacy efforts amplify the voices of communities and advocate for policies that support the GGRF's objectives, contributing to a more sustainable and equitable future.

Commercial banks: Commercial banks (and other financial institutions) play a critical role in supporting green banks and CDFIs in their efforts to promote private sector investment in low-income communities and drive sustainable development. By leveraging their financial

34 U.S. Department of the Interior. 2023. "Inflation Reduction Act Invests Over $120 Million in Proven Projects to Advance Climate Resilience, Conservation and Equity." https://www.doi.gov/pressreleases/inflation-reduction-act-invests-over-120-million-proven-projects-advance-climate.

resources, expertise, and networks, commercial banks can significantly amplify the impact of green banks and CDFIs, helping to bridge the financing gap for clean energy and community development projects in underserved areas. An example is Bank of America's investments in CDFIs. Bank of America has currently committed more than USD 2 billion in loans, deposits, capital grants and equity investments across its 250+ CDFI partners in all 50 states and the District of Columbia.[35]

Developers and contractors: Developers' role in the GGRF includes identifying, designing, pursuing permitting for, finding finance for, and building projects that effectively reduce GHG emissions. Their work is complemented by contractors, who are responsible for the physical construction and installation of the projects. Their expertise in engineering, construction, and project management is instrumental in ensuring the efficient, safe, and cost-effective implementation of projects that align with the GGRF's ambitious goals.

35 Bank of America. 2023. "Community-changing partnerships." https://about.bankofamerica.com/en/making-an-impact/cdfis.

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