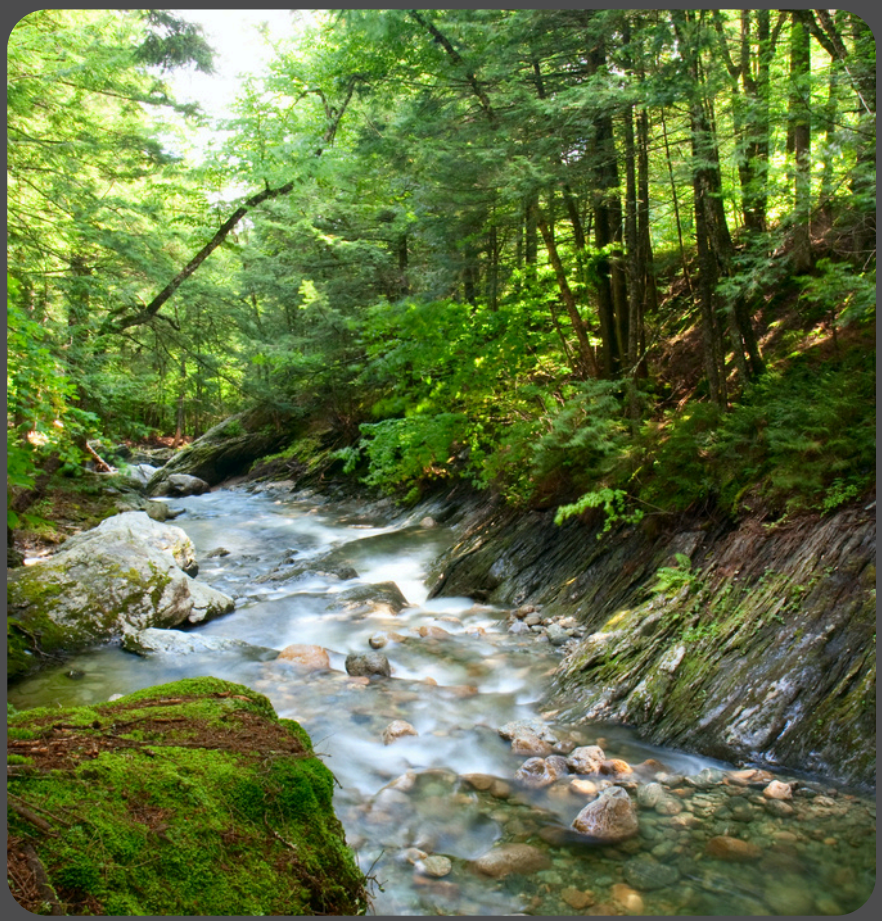
Quantified Ventures

2024 CLIMATE INVESTMENT LOOKBOOK



For more information:

Tee Thomas
CEO

thomas@quantifiedventures.com

Visit us online:

quantifiedventures.com

September 2024

Opportunity Summary

The $27 billion Greenhouse Gas Reduction Fund presents a once-in-a-generation opportunity for climate and resilience projects and aligned investors.

Quantified Ventures identified 120+ aligned agriculture, forestry, land use, water, and wood product projects through a national Request for Information. These 21 projects rose to the top during our rigorous evaluation process.

$1B+ investment opportunity

21 climate and resilience projects

$48.5M avg transaction size

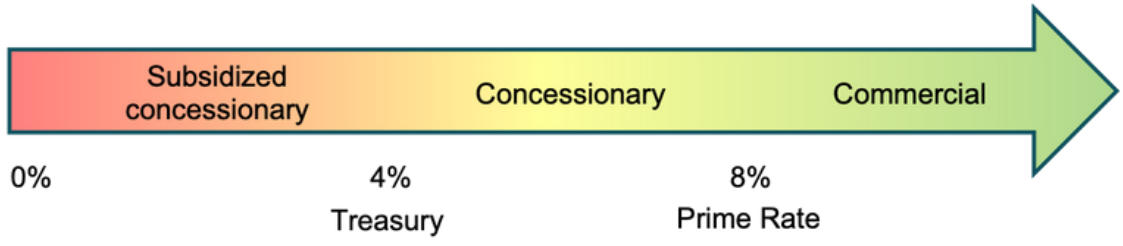
Borrower types

- For-Profit
- Non-profit
- Local government
- Fund

Project types

- Agroforestry + regenerative agriculture / aquaculture (3)
- Biochar + renewable energy (4)
- Biofuel production + biomass energy (5)
- Forest carbon + sustainable forest management (4)
- Green infrastructure + land conservation (2)
- Wood products (3)

Loan Terms Classification



Loan Length Classification *

*Categories may overlap based on particulars of the transaction. For example, a 15-year loan request may be classified as conventional if it is collateralized by a revenue-generating asset, but as patient otherwise.

New England Forest Investment

Project Narrative

Expansion of a new impact forward fund in Northern New England focused the core of the largest intact mixed temperate forest in the world, up to 50% of which is in degraded condition from conventional timberland investment management. The fund's investment structure better matches financial returns with ecological carrying capacity, providing tangible positive impacts for carbon sequestration, wildlife habitat, recreational access, and local communities. The fund is partnering with local nonprofit who will manage a trail system on the acquired lands to serve the local community.

- **Project developer:** New England non-profit, managing for-profit forestry fund
- **Problem addressed:** Forest fragmentation, overharvesting biodiversity protections, local community investment
- **Solution (activities):** Acquiring properties to be the landowner the conservation community wants to work with and instituting "exemplary forestry" standards
- **Key outcomes being tracked:** Carbon sequestration, acres protected, public access

Transaction Summary

Transaction Size	**$10M for second acquisition**
Project Type	**Forest carbon + sustainable forest management**
Geography	**New England**
Borrower Type	**Fund**
Type of Financing	**Land Acquisition**
Loan Terms	**Concessionary**
Loan Length	**Patient**
Repayment Sources	**Carbon credit sales, conservation easement sale, timber sale**

Green Infrastructure for At-Risk Schools in the Great Lakes Region

Project Narrative

Green infrastructure for 10 public schools located in areas with high climate risk and social vulnerability index. The projects were developed as green schoolyards in collaboration with school staff, students, parents, and local leaders. In addition to providing green space benefits, the green infrastructure will contribute to the city's effective stormwater management program to combat combined sewer overflows.

- **Project developer:** Regional sewer district
- **Problem addressed:** Stormwater management, localized flooding, water quality, access to green space, environmental education
- **Solution (activities):** Green schoolyards
- **Key outcomes being tracked:** Stormwater gallons managed, GHG reduction

Transaction Summary

Transaction Size	$30M
Project Type	Green infrastructure
Geography	Upper Mississippi River
Borrower Type	Local government
Type of Financing	Infrastructure
Loan Terms	Concessionary
Loan Length	Conventional
Repayment Sources	General obligation

Forest Carbon Program

Project Narrative

This Forest Carbon Program will empower small forest owners to participate in carbon markets across the U.S. High upfront costs and complex project development has long been a barrier to small family forest owners from participating in the voluntary carbon market. Professional foresters will be partnered with land owners to develop forest management plans and advise on the implementation of practices.

- **Project developer:** National conservation organization
- **Problem addressed:** Small forest land owners often face challenges and barriers to entering the voluntary carbon market, which prevents them from being able to capitalize on potential revenue sources for their land
- **Solution (activities):** Creates an opportunity for small landowners to create carbon credits
- **Key outcomes being tracked:** Sale of carbon credits

Transaction Summary

Transaction Size	$100M
Project Type	Sustainable forest management
Geography	Nationwide
Borrower Type	For-Profit
Type of Financing	Working capital
Loan Terms	Commercial
Loan Length	Patient
Repayment Sources	Offtake agreements and carbon credit sales

Avoided Grassland Conversion

Project Narrative

This project proposes to create conservation easements that will ultimately convert to carbon credits made available on the voluntary carbon market. Landowners will be offered low interest loans to assist with closing costs. The creation of conservation easements will ultimately help prevent the conversion of land into agricultural land, which releases stored carbon. Ultimately landowners will receive a revenue share from the sale of carbon credits.

- **Project developer:** National conservation organization
- **Problem addressed:** Conversion of land and resources in the Southern U.S.
- **Solution (activities):** Creates conservation easements
- **Key outcomes being tracked:** Carbon emissions

Transaction Summary

Transaction Size	$3M
Project Type	Land conservation
Geography	Texas
Borrower Type	Non-Profit
Type of Financing	Operating loan
Loan Terms	Subsidized concessionary
Loan Length	Conventional
Repayment Sources	Sale of carbon credits

Production Facility for High Quality Biocarbon

Project Narrative

Investment to build facility to scale production of high quality biocarbon products, that help heavy industries decarbonize: by substituting biocarbon for fossil carbons in industrial processes. This investment facility has letters of intent for commercial offtakes agreements with a large multinational metals company. This company will create 35-40 jobs in the disadvantaged Big Bend region of Florida, and use sustainably-sourced, wood waste feedstocks from this timber heavy region.

- **Project developer:** Biochar company focused on decarbonizing industry
- **Problem addressed:** Increasing production capacity for biocarbon alternatives to carbon intensive industrial processes
- **Solution (activities):** Production of biocarbon, biochar, syngas, other carbon products
- **Key outcomes being tracked:** Sales and carbon emissions

Transaction Summary

Transaction Size	**$50M**
Project Type	**Biocarbon + biochar**
Geography	**Florida**
Borrower Type	**For-Profit**
Type of Financing	**Construction**
Loan Terms	**Commercial**
Loan Length	**Patient**
Repayment Sources	**Biocarbon product sales**

Wood Reutilization Facility

Project Narrative

Investment into a wood reutilization facility that transforms fallen urban and suburban trees that would otherwise be landfill-bound into commodities (green lumber, compost, biochar, and mulch) at a zero-waste facility in a disadvantaged community. Located in the Mississippi River Basin, this project has strong relationships with local businesses, arborists, and community members who will benefit from new jobs, waste reduction, and this scalable model.

- **Project developer:** For-profit, in joint venture with local enterprise
- **Problem addressed:** Wood waste
- **Solution (activities):** Creation of new revenue opportunities from discarded fallen trees
- **Key outcomes being tracked:** Tree waste reduction

Transaction Summary

Transaction Size	$1.5M
Project Type	Wood products
Geography	Mississippi River Basin
Borrower Type	For-Profit joint venture
Type of Financing	Construction
Loan Terms	Concessionary
Loan Length	Conventional
Repayment Sources	Sale of products, grant reimbursements

Wildfire Risk Reduction Bridge Financing

Project Narrative

National nonprofit organization has secured nearly $300M from Inflation Reduction Act (IRA) and Bipartisan Infrastructure Law (BIL) in reimbursable agreements from the U.S. Forest Service for fire risk reduction efforts spanning eight western states and approximately 150,000 acres. This grant-funded work will provide needed assistance to the stretched federal agency: it will enable a nimble partner to implement fire reduction more quickly, limiting carbon emissions from large fires. Without bridge financing, it may take several years longer to implement this work.

- **Project developer:** National conservation organization
- **Problem addressed:** Wildfire risk, through bridge financing for large federal grants
- **Solution (activities):** Forest health treatments to reduce wildfire risk on public lands
- **Key outcomes being tracked:** Acres treated; federal dollars unlocked

Transaction Summary

Transaction Size	$300M
Project Type	Sustainable forest management
Geography	Western U.S.
Borrower Type	Non-Profit
Type of Financing	Bridge
Loan Terms	Commercial
Loan Length	Bridge
Repayment Sources	Reimbursement from awarded BIL + IRA grants

Local Biomass Power Plant Supported by Sustainable Forestry Management

Project Narrative

This is an existing biomass power plant that is committed to sustainable forestry management and has a surplus of waste heat from the power generation process in combined heat and power. The project intends to capture this waste energy and additional steam to connect to the largest natural gas consumers in order to reduce their greenhouse gas (GHG) emissions by 74% and total city commercial natural gas emissions by 11.5%.

- **Project developer:** Energy system operator
- **Problem addressed:** Reduction of GHG in steam production
- **Solution (activities):** Create an underground distribution pipe from the existing biomass power plant to customer buildings
- **Key outcomes being tracked:** Heating energy (steam and hot water) piped directly to customer buildings; GHG reduction due to lowered gas consumption

Transaction Summary

Transaction Size	**$45M**
Project Type	**Biomass energy**
Geography	**Vermont**
Borrower Type	**Non-Profit**
Type of Financing	**Infrastructure**
Loan Terms	**Subsidized concessionary**
Loan Length	**Patient**
Repayment Sources	**Energy sales**

Energy-Efficient Carp Processing Plant in an Abandoned Mine

Project Narrative

This project involves construction of a low-emission, technology-enabled fish processing plant serving major pet food manufacturers. Contributing ~30% of the environmental impact of U.S. meat consumption, pet food is an often-overlooked GHG emitter – an oversight this project corrects by substituting locally-harvested invasive carp in place of fish caught through GHG-releasing bottom-trawling practices. Repayment is supported through long-term off-take agreements already in place with the pet food industry's largest brands.

- **Project developer:** Woman-owned alternative pet food company
- **Problem addressed:** Ocean fish trawling, serving US pet industry, releases massive amounts of CO2e/year
- **Solution (activities):** Substitutes GHG-intensive, imported fish products with domestic invasive carp, protecting biodiversity and offsetting GHG emissions
- **Key outcomes being tracked:** GHG offsets, biodiversity restoration, job creation

Transaction Summary

Transaction Size	**$5M**
Project Type	**Regenerative acquaculture**
Geography	**Mississippi River Basin**
Borrower Type	**For-Profit**
Type of Financing	**Construction**
Loan Terms	**Subsidized concessionary**
Loan Length	**Conventional**
Repayment Sources	**Sales of processed fish**

Forest Biomass Energy Cluster

Project Narrative

Development of two biomass energy plants in rural California which will utilize waste wood from existing wildfire mitigation activities on national and state forests. This project will reduce the risk of catastrophic wildfires by utilizing waste wood while producing reliable backup power in rural, disadvantaged regions that are vulnerable to power outages. This approach will effectively dispose of waste wood, which would otherwise burn or degrade, while providing jobs and energy security to underserved communities.

- **Project developer:** Community-scale biomass energy developer
- **Problem addressed:** Wildfire risk, energy shortages in rural communities
- **Solution (activities):** Development of two biomass energy plants in rural California, advancing regional biomass cluster (plans for 10+ co-located plants)
- **Key outcomes being tracked:** Carbon Removal Certificates (CORCs), biomass consumed, electricity generated

Transaction Summary

Transaction Size	$80M
Project Type	Biomass energy
Geography	California
Borrower Type	For-Profit
Type of Financing	Energy
Loan Terms	Concessionary
Loan Length	Patient
Repayment Sources	PPAs, CORCs, grants

Wood-Fueled District Heating

Project Narrative

Deployment of a wood-chip combined heat and power system to reduce operating costs for a senior assisted living campus. Wood-chips are a form of renewable fuel and can displace fossil fuels. The project will drive a market for approximately 5,000 tons of wood chips on an annual basis which will be derived from local forest management operations and manufacturing residuals. This will be a valuable U.S demonstration project for gas condensation technology, widely used in Europe. The project is supported by a local National Forest, which will supply wood, and the state Department of Energy.

- **Project developer:** Senior assisted living campus
- **Problem addressed:** Fossil fuel reliance, expensive utility grid electricity
- **Solution (activities):** Wood-chip fueled thermal energy system to provide on-site energy to a senior living campus
- **Key outcomes being tracked:** Energy generated, thermal renewable energy credits (RECs)

Transaction Summary

Transaction Size	$8M
Project Type	Biomass energy
Geography	New England
Borrower Type	For-Profit
Type of Financing	Energy
Loan Terms	Subsidized concessionary
Loan Length	Patient
Repayment Sources	Heat purchase agreements, RECs, operating cost savings

Transforming Biomass into Sustainable, Affordable Construction Materials

Project Narrative

Construction of a manufacturing plant to transform wildfire-prone biomass into Wood Wool Cement wall panels, a sustainable and cost-effective construction material. The utilization of local timber biomass, typically seen as waste, promotes sustainable forest management and wildfire risk reduction while meeting demand for affordable construction materials. This approach can also lead to homes being built 75% faster and a 20% lower cost than competing materials. The manufacturing plant is expected to produce materials for approximately 3,000 affordable housing units per year.

- **Project developer:** Sustainable construction material manufacturer
- **Problem addressed:** Affordable housing shortages, expensive and carbon intensive building materials, excessive waste wood from standard forest management practices
- **Solution (activities):** Manufacturing and use of wood wool cement paneling for affordable housing development
- **Key outcomes being tracked:** Panels manufactured, houses built, jobs created, biomass used and associated wildfire damage reduction, reduced energy use

Transaction Summary

Transaction Size	$35M
Project Type	Wood products
Geography	Southwestern U.S.
Borrower Type	For-Profit
Type of Financing	Construction
Loan Terms	Concessionary
Loan Length	Patient
Repayment Sources	Sales of construction panels

Regenerative Ranching on an Indigenous-Owned Farm

Project Narrative

5,000-acre expansion of an indigenous-owned ranch currently practicing regenerative ranching. Soil carbon that has accumulated slowly for centuries in the semi-arid U.S. West can be lost in a matter of years through unsustainable ranching practices. Investment will allow the indigenous rancher the access to land ownership necessary for long-term commitments to regenerative practices that sequester additional carbon, reduce soil degradation, and improve ecosystem quality.

- **Project developer:** National sustainable agriculture investment fund
- **Problem addressed:** Ecosystem imbalance and degradation from lack of sustainable livestock management
- **Solution (activities):** Rotational livestock management to optimize vegetation growth; improvements in irrigation and fencing infrastructure
- **Key outcomes being tracked:** Soil carbon sequestration, plant biodiversity, water infiltration per Grazewell "land health objectives" standards.

Transaction Summary

Transaction Size	**$1.5M**
Project Type	**Regenerative agriculture**
Geography	**Pacific Northwest**
Borrower Type	**For-Profit**
Type of Financing	**Land acquisition**
Loan Terms	**Subsidized concessionary**
Loan Length	**Conventional**
Repayment Sources	**Sales of beef through co-op**

Construction of Facilities Converting Biomass to Renewable Fuel Oil

Project Narrative

Construction of four renewable fuel oil production facilities across the U.S., each delivering 20M gallons per year of high-quality bio-fuel. These facilities are an expansion of a proven model successfully implemented by the applicant in other plants they have established, employing breakthrough, patented technology. Project has already received more than $200M in equity investment.

- **Project developer:** For-profit renewable energy and infrastructure fund
- **Problems addressed:** 1) Users of oil products struggle to find a non-fossil fuel-based product, and 2) Wood waste inhibits forest regrowth and increases risk of forest fires
- **Solution (activities):** Conversion of under-/non-utilized biomass to a renewable bio-fuel, utilizing wood waste and leading to an ~86% decrease in GHG emissions
- **Key outcomes being tracked:** Carbon emissions reduced, feedstock sustainability, energy efficiency, job creation, local procurement spending, revenue generation

Transaction Summary

Transaction Size	**$150M**
Project Type	**Biofuel production**
Geography	**Nationwide**
Borrower Type	**Fund**
Type of Financing	**Manufacturing**
Loan Terms	**Concessionary**
Loan Length	**Patient**
Repayment Sources	**Offtake agreements for biofuel + D7 RIN renewable fuel credits**

Agroforestry for Fenceposts, Decking, and Carbon

Project Narrative

Scaling operations of an innovative wood products firm that plants, owns, and manages agroforestry systems on leased farmland to produce tree-products like fence posts and chestnuts, while sequestering resulting in carbon credits. These activities heal decades of historical deforestation while ensuring productive use of farmland, all grounded in rural economies. With 5,000 acres ready to plant and plans to expand across three states, this firm has commitments from lumber mills, major tech companies, and large grocery chains for the purchase of lumber, carbon credits, and chestnuts.

- **Project developer:** Agroforestry investment and project development platform
- **Problems addressed:** Deforestation and degradation due to agricultural land use
- **Solution (activities):** Planting, ownership, and management of agroforestry systems on leased farmland for reforestation, carbon sequestration, and valuable wood products
- **Key outcomes being tracked:** Carbon emissions reduced, biodiversity, job creation

Transaction Summary

Transaction Size	**$30M**
Project Type	**Agroforestry**
Geography	**Eastern U.S.**
Borrower Type	**For-Profit**
Type of Financing	**Land acquisition**
Loan Terms	**Commercial**
Loan Length	**Conventional**
Repayment Sources	**Sales of lumber, chestnuts, and carbon credits**

Construction of an All-Electric Mass Timber Multifamily Development

Project Narrative

Construction of the Rocky Mountain region's first mass-timber, all-electric multifamily development will minimize embodied and operating carbon, while providing needed dense housing units in an in-demand urban area. With buildings contributing ~40% of global carbon emissions, this project offers a sustainable path forward, quantifying embodied carbon while demonstrating that green buildings are economically viable. Led by an experienced team of developers, this project has strong local buy-in, with city government changing municipal regulation to ensure the project can take place.

- **Project developer:** Family-owned real estate development firm
- **Problem addressed:** Carbon emissions produced by buildings; local housing shortage
- **Solution (activities):** Construction of a mass timber and all-electric multifamily housing complex, minimizing carbon footprint, while providing necessary dense housing units
- **Key outcomes being tracked:** Carbon embodied through LCA, affordable housing units offered, local jobs created

Transaction Summary

Transaction Size	$60M
Project Type	Wood products + multifamily housing
Geography	Colorado
Borrower Type	For-Profit
Type of Financing	Construction
Loan Terms	Concessionary
Loan Length	Conventional
Repayment Sources	Rental income, building sale

Biochar and Renewable Energy From Locally Sourced Biomass

Project Narrative

This project converts forestry and agricultural byproducts into biochar and renewable energy. This project is intensely local, sourcing biomass from within a 25-mile radius and distributing biochar to local users and selling energy to local utilities. Ultimately this approach will support the local economy and address climate needs aligning with nature-based solutions.

- **Project developer:** Renewable energy developer
- **Problem addressed:** Greenhouse gas emissions, renewable energy sources
- **Solution (activities):** Convert biomass into biochar and electricity
- **Key outcomes being tracked:** Energy generation, biochar sales, carbon removal credits

Transaction Summary

Transaction Size	$10M
Project Type	Biochar + renewable energy
Geography	Vermont
Borrower Type	For-Profit
Type of Financing	Energy
Loan Terms	Commercial
Loan Length	Conventional
Repayment Sources	Sale of energy + carbon credits

Biochar Production for Soil Amendment and CO2 Sequestration

Project Narrative

This project utilizes waste heat captured from a biomass power plant, and will produce biochar from forest residuals. Ultimately this supports sustainable forest management by increasing the regional market for low-grade wood, sequesters CO2e, and supplies biochar for soil carbon amendments to the region on working lands.

- **Project developer:** Startup biomass energy developer
- **Problems addressed:** Greenhouse gas reduction and local economy
- **Solution (activities):** Biomass conversion into biochar
- **Key outcomes being tracked:** Biochar sales

Transaction Summary

Transaction Size	$30M
Project Type	Biochar + renewable energy
Geography	New England
Borrower Type	For-Profit
Type of Financing	Infrastructure
Loan Terms	Concessionary
Loan Length	Conventional
Repayment Sources	Sales of biochar

Pure Carbon Play with Durable Carbon Credits

Project Narrative

Biomass disposal is a challenge often faced in forest restoration projects. This project proposes to use forest biomass and sell durable carbon removal credits. Historically, forest restoration projects often dispose of residuals through pile burning. Through the creation of a carbon vault, this project will eliminate the need for pile burning, which will in turn expedite land restoration timelines, reduce overall local project costs, and reduce fire pollution.

- **Project developer:** Climate technology startup
- **Problems addressed:** Biomass disposal for forest restoration projects, greenhouse gas emissions, land restoration
- **Solution (activities):** Creation of a carbon vault
- **Key outcomes being tracked:** Sale of durable carbon credits

Transaction Summary

Transaction Size	**$5M**
Project Type	**Sustainable forest management**
Geography	**Nevada**
Borrower Type	**For-Profit**
Type of Financing	**Project finance**
Loan Terms	**Commercial**
Loan Length	**Conventional**
Repayment Sources	**Sales of carbon credits**

Biomass Power

Project Narrative

This project uses low grade wood biomass sourced from local logging operations to generate electricity and heat. This heat will be delivered to a local power system to heat an existing insulation plant. Ultimately this project will create more jobs in rural Maine and contribute to the local economy.

- **Project developer:** Timber harvesting collective
- **Problem addressed:** Greenhouse gas emissions, local job creation, local economy
- **Solution (activities):** Use of biomass power to generate heat and electricity for a local insulation plant
- **Key outcomes being tracked:** Heat and electricity generation, GHG reduction, community benefits

Transaction Summary

Transaction Size	$45M
Project Type	Biomass energy
Geography	Maine
Borrower Type	For-Profit
Type of Financing	Infrastructure
Loan Terms	Subsidized concessionary
Loan Length	Conventional
Repayment Sources	Sales of energy

Former Mine Lands to Sustainable Lands: Energy Community Revitalization

Project Narrative

This investment seeks to transform abandoned mine lands into projects that drive rural economic growth and lay the groundwork for a climate technology growth cluster in Appalachia. Thousands of former mine lands are no longer in productive use, creating unfunded liabilities, ecological destruction, and social inequity. This project is part of a $62.8M grant award that will create 5,000 new direct jobs, 15,000 indirect jobs, 125 new businesses, and will leverage over $250M in private sector investment.

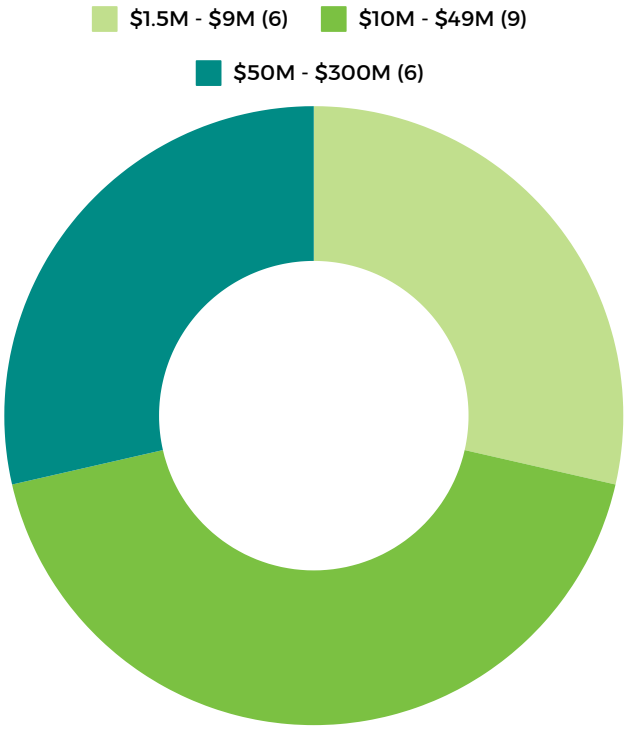
- **Project developer:** Coalition comprised of non-profits, universities, and for-profits
- **Problems addressed:** Economic and environmental liabilities from abandoned mine lands, energy community injustices
- **Solution (activities):** Transforming abandoned mine lands into sustainable end uses, such as renewable energy, recreation, and housing to benefit local communities and drive economic development
- **Key outcomes being tracked:** Jobs created, private investment leveraged, sites redeveloped

Transaction Summary

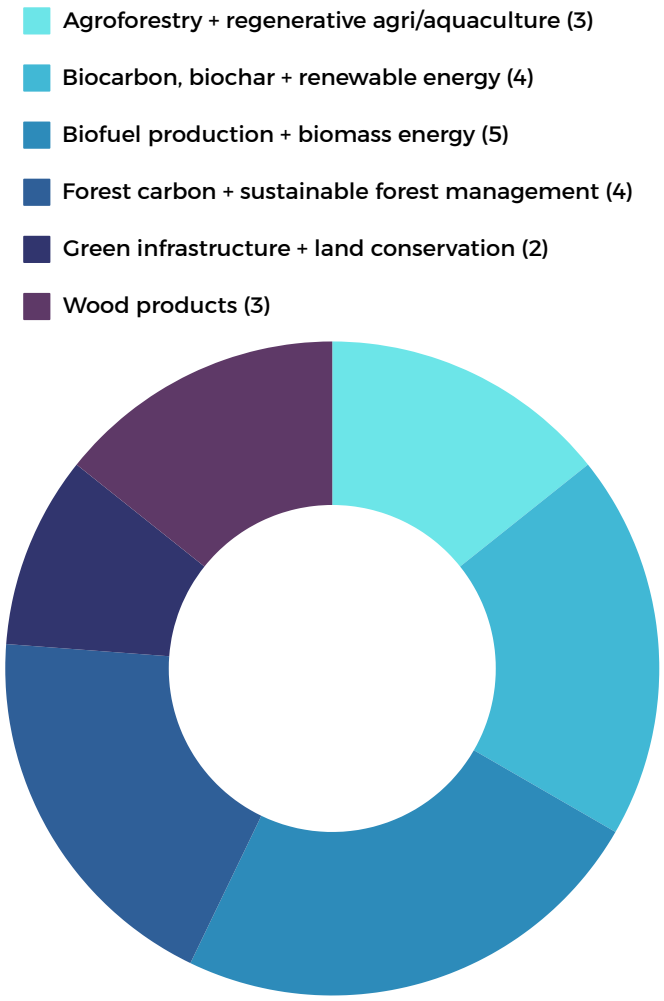
Transaction Size	$8M-$20M
Project Type	Renewable energy
Geography	Appalachia
Borrower Type	Varies
Type of Financing	Varies
Loan Terms	Concessionary
Loan Length	Patient
Repayment Sources	Renewable energy generation, recreation opportunities, grant funds

By the Numbers

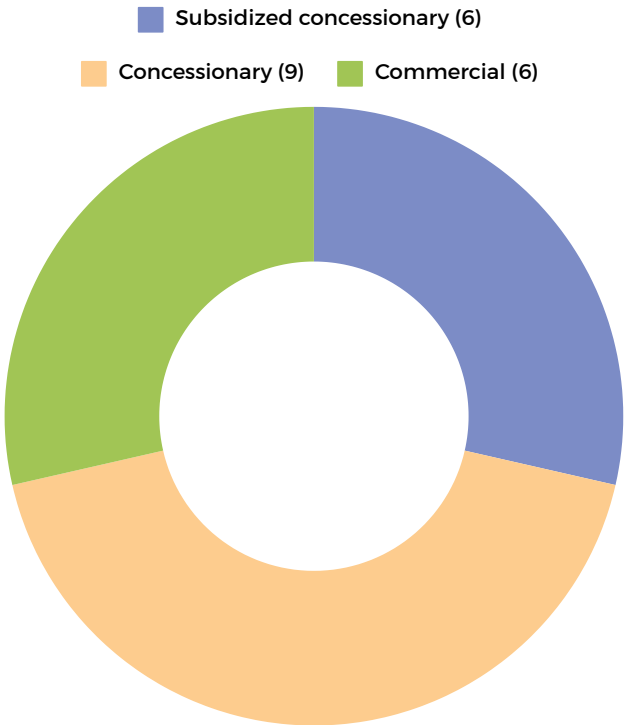
Transaction Size



Project Types



Loan Terms Classification



Contact Us

2024 CLIMATE INVESTMENT LOOKBOOK

Contact	Tee Thomas, CEO
Email	thomas@quantifiedventures.com
Website	quantifiedventures.com/ggrf-rfi
Offices	Washington, DC + Montpelier, VT

Certified B Corporation

This company is part of the global movement for an inclusive, equitable, and regenerative economic system.

certified WBENC WOMEN'S BUSINESS ENTERPRISE