**U.S. Department of Energy (DOE)  
Clean Energy to Communities (C2C) Program**

Summary of Technical Assistance (TA) Support

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| Icon  Description automatically generatedBuildings |
| Icon  Description automatically generatedClean Power |
| Climate Mitigation and Resilience |
| Cross-Sectoral Justice |
| A picture containing text, clipart  Description automatically generatedJobs and Economic Development |
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**Free Union-Piney Woods, North Carolina**

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From July 2023 through March 2024, the National Renewable Energy Laboratory (NREL) provided technical input for agrivoltaics system design and performed a techno-economic analysis using NREL’s System Advisor Model (SAM™) to compare agrivoltaics configurations with specific inputs from the Free Union-Piney Woods, North Carolina, site (Free Union Farm). Outputs compared costs, farmable areas, and electricity generation.

 Impact

Provided valuable insights for agrivoltaics, enabling Free Union-Piney Woods farmers to make informed decisions that enhance sustainable farming practices and foster community development.

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**Background**

Ann Arbor is a city of approximately 122,000 people located in southeast Michigan. The city and its residents are leaders in sustainability and climate action. Their A2ZERO Climate Action Plan outlines their just transition pathway to community-wide carbon neutrality by 2030. With equity as a focus, they are implementing strategies to improve home energy efficiency (EE) and electrify appliances. Toward this, the city wants to explore community geothermal heating and cooling to serve a variety of building types including rental and affordable housing. The city has applied to DOE’s Geothermal Heating and Cooling Design and Deployment program and garnered the support of City Council to pursue these projects, but they need to understand the concept’s feasibility in order to make a “go, no-go” decision.

Rural Beacon Initiative (RBI), located in Free Union-Piney Woods, North Carolina, is a social enterprise dedicated to promoting business sustainability and environmental justice. They achieve this through consultancy, strategic convening, and deploying models for practical, scalable community-based solutions, with a focus on increasing ownership diversity in regenerative agriculture and renewable energy supply chains. RBI believes rural communities offer opportunities for innovative climate solutions, exemplified by their Free Union Farm project in rural eastern North Carolina. The 52-acre Sustainability Hub at Free Union Farm serves as a pilot demonstration of regenerative agroforestry, conservation finance, sustainable rural development, and resilient community-based solutions to the climate crisis. Black farmers in the area are increasingly interested in sustainable agriculture, exploring agrivoltaics to revolutionize farming practices by combining solar energy generation with agricultural production.

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Description automatically generated with low confidence Expert Match Team

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C2C Expert Match Program Manager, NREL

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Description automatically generated Community Team

**William Barber III**  
Founder and Chief Executive Officer (CEO)

For more information, visit:  
**energy.gov/eere/clean-energy-communities-program**

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