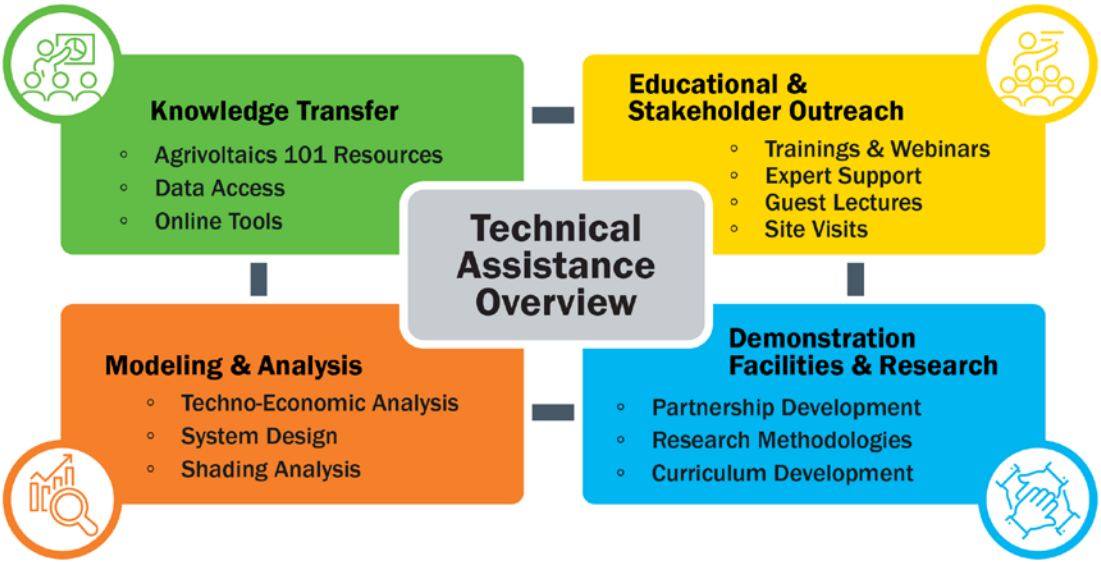
C2C: Clean Energy *to* Communities
U.S. DEPARTMENT OF ENERGY

Expert Match

Agrivoltaics Technical Assistance

This guide summarizes agrivoltaics technical assistance pathways, case studies, and deliverables from past participant involvement.



The National Renewable Energy Laboratory's (NREL's) **InSPIRE team** (openei.org/wiki/InSPIRE/Team) partners with community-based organizations, farmers, academic institutions, and Tribal, local, and state governments to provide agrivoltaics technical assistance. The InSPIRE team primarily provides technical assistance through the **Clean Energy to Communities (C2C) Expert Match program** (nrel.gov/state-local-tribal/c2c-expert-match.html), as well as the **Communities Local Energy Action Program (Communities LEAP)** (energy.gov/communitiesLEAP/communities-leap), and **Energy Transitions Initiative Partnership Project (ETIPP)** (energy.gov/eere/energy-transitions-initiative-partnership-project).

C2C Expert Match participants span the United States, each with their own unique set of agrivoltaics project goals. NREL works with each participant to incorporate site-specific conditions, and energy, agricultural, community, educational, and project goals into each partnership.

Previous C2C Expert Match agrivoltaics technical assistance included one or more of the following outcomes:

- **Siting and compatibility evaluation** – Assist with scoping the potential of rural and/or urban agrivoltaics site(s) based on local variables, project goals, and lessons learned from NREL's previous and current agrivoltaics research sites.
- **Techno-economic analysis** – Provide a high-level, techno-economic analysis that compares multiple agrivoltaic configurations with site-specific inputs to compare costs, electricity generation, and farmable area across scenarios.
- **Shading analysis** – Provide site-specific shading analysis for a variety of agrivoltaic designs to determine seasonal sunlight availability and inform crop compatibility.
- **Educational workshop** – Host a virtual community workshop to engage local stakeholders, provide educational resources and/or presentations, and answer any agrivoltaics-related questions.

NREL agrivoltaics experts, Brittany Staie, James McCall, and Dana-Marie Thomas (not pictured) met with the Black Farmers Collaborative at Jack's Solar Garden in Longmont, Colorado to discuss agrivoltaic design options, crop and agricultural equipment compatibility, partnership development, and site operations. **NREL's InSPIRE team** (openei.org/wiki/InSPIRE/Team) provided technoeconomic analysis to Black Farmers Collaborative member, Cetta Barnhart, to compare five agrivoltaic design options for her farm, Seed Time Harvest, in Monticello, Florida through **C2C Expert Match** (nrel.gov/c2c/expertmatch). Read more about this technical assistance case study **here** (nrel.gov/news/features/2023/nrel-partners-with-black-farmers-collaborative-to-plan-solar-panels-for-florida-farms-and-churches.html). *Photo by Dana-Marie Thomas, NREL*

- **Guest lecture** – Provide high-level or technical guest lectures for students at colleges, universities, and/or K-12 schools that include the study of agrivoltaics and/or renewable energy production on farms.
- **Agrivoltaics tour** – When applicable, host a tour of NREL's agrivoltaics research site in Golden, Colorado, and/or potentially other local agrivoltaics sites.
- **Networking** – Provide access to a wide variety of connections in the agrivoltaics field to connect communities with the right partners and/or resources to help them in their agrivoltaics development process.

If you would like some assistance with building out an agrivoltaics project in your community, visit the following webpages to learn if you qualify for C2C, access the application, and view an example from a previous C2C Expert Match participant:

- **C2C Expert Match overview** (nrel.gov/state-local-tribal/clean-energy-to-communities.html)
- **C2C Expert Match application** (forms.office.com/pages/responsepage.aspx?id=fp3yoM0oVE-EQniFrufAgBDSPedjI7JJjQjk6YNqhrJUQTRLTTIJMk1BTzdUT0xLMkpWUk9GWFpFOC4u)

GETTING STARTED

These Technical Assistance Top 10 initial questions are asked at the beginning of technical assistance activities and are important factors to consider during project planning:

1. What size land parcel(s) would you want to put into agrivoltaic production (acres), and/or what is your desired solar size (kW) or generation (kWh)?
2. What are relevant site-specific conditions (e.g., existing land use, slope of land, soil quality, water access, transmission access) that may impact your design?
3. What are your desired agrivoltaic activities (e.g., grazing, crop production, pollinator habitat)?
4. Do you have a desired solar configuration (e.g., fixed tilt, raised, tracking) in mind?
5. Do you want to sell your solar electricity production to the grid or use to offset on-farm electricity use, and would you want to include battery storage?
6. Do you want to integrate educational, outreach, and/or research goals into your project design?
7. Who are your current and desired project partners?
8. What is your project timeline? What available staffing resources and budget do you have to support this project?
9. How do you plan to finance your project and/or are you aware of grants available to offset the installation cost?
10. Are there any relevant personal, organizational, legal, and/or financial constraints or objectives you want to consider in the design?

For more information, visit:
openei.org/wiki/InSPIRE

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