

Electric Agriculture Technology Collaborative



- Annual “State of Technology” Brief on the latest innovations in electric/low carbon agriculture equipment
- Mechanism to conduct technology demonstrations relevant to your specific agricultural customer needs
- Access to detailed learnings and economic analysis from multiple utility and customer demonstrations

Background and Objectives

Innovation in agriculture has led to new electric technologies for end-use agricultural customers such as single-phase written pole motors for irrigation, robotics for dairy and livestock tending, radio frequency and heat pump grain/biomass drying, and electric and low carbon carrier fuel tractors and harvesting equipment.

However, these technologies can be costly and may require a learning period to realize their full benefits. While their potential benefits may well justify this investment, their feasibilities are still largely unproven in demanding agricultural applications.

The objective of this project is to identify potentially beneficial and appropriate electric/low carbon agriculture technologies to demonstrate with funding members and their customers, and to share detailed learnings.

Potential Benefits

- Learn from the specifics of each member’s demonstrations with their customers.
- Receive analysis and insight regarding realized benefits that may include lower operating costs through use of more efficient equipment, improved throughput and productivity, higher quality products, and more sustainable choices in technology options for agriculture customers.
- Receive go-to-market assistance for agriculture-focused electrification program initiatives.
- Enable reduced local emissions which may improve worker health and safety as well as reduce net emissions to benefit society-at-large.

Project Summary

Survey ag tech innovation: Conduct scouting efforts and secondary research to identify innovative electric sourced agriculture and aquaculture technology applicable to members’ regional markets, including technology for crop and livestock production, on-site post processing, handling, and storage.

Develop member-specific demonstration plans: Work with members and the customers they identify to propose possible electric/low carbon technology demonstration projects, informed by the ag tech survey findings. Help solicit technology partners (OEMs) and scope out technology options specific to their customer’s situation. Develop a demonstration plan specific to each member, including budget, schedule, equipment specification, test plan and metering needs. The demonstration plan is intended to thoroughly inform each member of an appropriate and complete demonstration pathway to meet their needs. The member and customer will ultimately choose the technology, as well as purchase and install the technology. EPRI can conduct this step as a separate contract, or members can do it on their own. Either way, EPRI intends to support the member and their customer through the purchase and installation process.

Conduct demonstration-specific analyses: Support members and their customers during installation. Conduct analysis of each demonstration to assess load and grid impacts, costs and technology payback, energy and non-energy benefits, market potential, and enablers and barriers associated with the technology.

Share key findings: Throughout the process, share experiences, learnings, and insights from various stakeholders, including third-party technology and market experts, through:

- An annual stakeholder forum to inform members of current innovations, and to bring together a community of vendors, farmers, governmental agencies (e.g., USDA), university researchers, and others to explore common areas of interest.
- Regular update webcasts as defined by the collaborative members.

Price of the Project

\$30k per year over a five-year term (\$150k total). Self-directed funds (SDF) or tailored collaborative (TC) funds may be used. The project requires five funders to commence.

Who Should Join?

Members with any variety of agricultural operations in their service territories should consider joining this project.

Contact Information

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 (askepri@epri.com).

Technical Contact

Perry Stephens at 864.764.1025 (O), 864.415.0564 (M) (pstephens@epri.com)

Year	Activities	Deliverables
2020	<ul style="list-style-type: none"> • Conduct comprehensive assessment of agriculture/aquaculture electric technologies relevant to members’ customers and territories • Develop Year 1 and 2 demonstration plans, host site selections, and scheduling • Launch Year 1 demonstration • Conduct initial collaborative planning and report-out meetings 	<ul style="list-style-type: none"> • Overall master project plan • “State of Technology” brief • Marketing slide deck to solicit customers to host the demonstrations • Years 1 and 2 demonstration plans • EPRI PM support for Year 1 demo • Periodic report-out webcasts • First planning/report out meeting
2021-2024	<ul style="list-style-type: none"> • Update of electric technology assessment • Develop Years 3–5 demonstration plans, host site selections, and scheduling • Launch Years 2–5 demonstrations • Complete Year 1–4 demonstration projects • Conduct annual collaborative planning and report-out meetings 	<ul style="list-style-type: none"> • Annual “State of Technology” updates • Year 3–5 demonstration plans (one/year) • EPRI PM support for Years 2–5 demos • Final reports/case studies for Year 1–4 demos (four reports) • Periodic webcasts • Annual planning/report out meetings (one/year)
2025	<ul style="list-style-type: none"> • Complete Year 5 demonstration project • Conduct annual collaborative planning and report-out meeting 	<ul style="list-style-type: none"> • EPRI PM support for Year 5 demo • Final report/case study for Year 5 demo • Periodic webcasts • Final report-out meeting

Electric Power Research Institute

3420 Hillview Avenue, Palo Alto, California 94304-1338 • PO Box 10412, Palo Alto, California 94303-0813 USA
 800.313.3774 • 650.855.2121 • askepri@epri.com • www.epri.com