

UMASS CLEAN ENERGY EXTENSION

Quarterly Progress Report to MA Department of Energy Resources

Period ending September 30, 2025

Contact: Dwayne Breger, Director, dbreger@umass.edu 413-545-8512

This Progress Report provides a summary of work accomplished by the UMass Clean Energy Extension (CEE) during the period July 1, 2025 to September 30, 2025.

During this reporting period, CEE has been engaged in two searches for new staff. First, the University has led a search for a new Director for CEE, and that search has progressed over this reporting period with the lead candidate. Lauren Mattison represented CEE on the search committee. After this reporting period, but prior to the submission of this report, CEE is pleased to announce that Dr. Kira Lawrence has accepted this new position and will start her work as the new CEE Director in January 2026. Kira brings research, teaching, and state clean energy policy service to her new position. We will introduce Kira further in the next progress report.

Second, CEE has engaged in a search for a new Municipal Clean Energy Extension Educator who will take on responsibilities to provide MEI user support, and to enhance CEE outreach and technical assistance to municipalities. This search has completed three interviews with leading candidates during this reporting period. This search committee was led by Zara Dowling and was supported by committee members Lauren Mattison, Mary Kraus, and Dwayne Breger. We also included representatives from FRCOG and PVPC as external advisors to this search.

Externally Funded Project Activities¹

In this section, we provide updates and progress on projects for which CEE has received substantial funding support from outside the DOER Interagency Service Agreement (ISA). We recognize that these activities still rely critically on the ISA for enabling CEE to pursue external funds and to sustain our staff and office needs generally.

Impacts of Dual-Use Solar on Crop Productivity and the Agricultural Economy in Massachusetts and Beyond

Prime Funding: U. S. Department of Energy

CEE, in collaboration with state solar industry partners, state agencies (DOER and MDAR), American Farmland Trust, and UMass collaborators, is leading a \$1.8M research project for *Impacts of Dual-Use Solar on Crop Productivity and the Agricultural Economy in Massachusetts and Beyond*, funded by the U.S. Department of Energy, Solar Energy Technology Office.

¹ Note on External Funds and CEE: An important strategic objective of CEE is to attract funds beyond our ISA with DOER. These external funds are tied to specific scopes of work and displace a portion of CEE core staff salaries from DOER funds; however, the bulk of these funds are typically used to extend CEE's capacities with other faculty, graduate students, consultants, and expenses tied to the project scope.

This quarter, our team continued monitoring the cranberry and sweet corn sites. Two publications documenting the research are under review: [Agrivoltaics: Connecting Agriculture and Renewable Energy – Insights into Microclimate, Physiological, Biochemical, and Yield Responses](#) and [Impact of Shading from Agrivoltaic Systems and Row Spacing Variations on Physiological and Biochemical Attributes of Cranberry](#). Manuscript preparation was ongoing for both the cranberry and vegetable sites, including [First Report of Effects of Agrivoltaic Shading on Yield and Fruit Quality Parameters of Howes and Stevens Cranberry Cultivars in Massachusetts](#). We continued to work on the online choice experiment design, including software license procurement and image finalization. As previously reported, CEE had requested a one-year no-cost time extension on this award to allow the team to monitor the site trials for another agricultural year and to complete our analysis of site trial data and economic impacts. Our request was approved, but only through December 31 of this year; both the curtailed project timeframe and the delay in granting the request have affected the scope of work. We continue to submit detailed quarterly reports on the project to US DOE and contribute to the DOE Solar Energy Technologies Office on their broader agrivoltaics efforts.

Offshore Wind Energy Professional Graduate Certificate Program

Prime Funding: UWW Registration Fees; Mass Clean Energy Center, OSW Workforce Development Program (see related MassCEC grant below).

CEE continues to develop and manage the program in coordination with the UMass Department of Environmental Conservation, the College of Natural Sciences (CNS), and University Without Walls (UWW).

During this quarter, CEE began the Fall 2025 program course (ECO 610 *Offshore Wind Energy: Technology, Resources, Grid Integration, and Trends*), with enrollment of 18 students. This represents a significant reduction in enrollment compared to our typical numbers, as anticipated given the repositioning of the federal government to curtail offshore wind. To broaden the value and interest in our program, we have made some adjustments to our curriculum to emphasize the relevance of our program to international offshore wind development and in skills relevant to other fields within the clean energy sector.

Supporting Diversity and Inclusion in the OSW Professional Workforce: Continuing the OSW Career Access Scholarship Program

Prime Funding: Mass Clean Energy Center, OSW Workforce Development Program

CEE was awarded a grant from MassCEC to support two cohorts of 6 OSW Career Access Scholars from diverse and disadvantaged communities to participate in our Offshore Wind Professional Certificate program.

This quarter, CEE provided financial and professional support for our six Access Scholars for the fall semester.

Expanding Offshore Wind Career Pathways for Port Communities and other Affinity Groups (for the UMass Amherst Offshore Wind Professional Certificate Program)

Prime Funding: Mass Clean Energy Center, OSW Workforce Development Program.

CEE was awarded a grant from MassCEC to expand access to offshore wind career pathways for Massachusetts' port communities. The grant will support 10 OSW Career Access Scholars in our Offshore Wind Professional Certificate program, targeting individuals from the key port regions of New Bedford and Salem.

During this period, CEE completed the grant agreement with MassCEC and began the project at the end of September. Key first steps are to reach out to our contacts in the port cities, and to prepare for the recruitment and application process for new Access Scholars for the Spring 2026 semester.

Providing Clean Energy Extension to the Massachusetts Farm Sector

Prime Funding: U.S. Department of Agriculture - Natural Resources Conservation Service (NRCS)

CEE was awarded a grant from USDA NRCS to provide technical assistance and support Massachusetts' farms with actionable recommendations and implementation support to reduce their energy use and energy costs. This grant will support a new half-time CEE staff position, and the other half of the full-time position will be funded by the UMass Center for Agriculture, Food, and the Environment to meet UMass Agriculture Extension's need for an agricultural engineering resource.

During this quarter, CEE made substantial progress in establishing program infrastructure, building partnerships, and initiating direct producer engagement under the NRCS agreement. Early activities focused on internal systems development and creation of tracking tools to monitor outreach and energy audit milestones. Key partnerships were established with state agencies, regional extension programs, and agricultural organizations. Program credentialing advanced through completion of the Association of Energy Engineers Certified Energy Auditor training in August. A new Agricultural and Energy Engineering webpage was published to centralize program information, including a comprehensive fact sheet that organizes federal, state, and utility resources alongside NRCS conservation practices.

Outreach and clientele engagement accelerated significantly in the latter half of the quarter, with September marking the busiest month as the program gained traction. Direct producer contact was established through attendance at grower association meetings, a greenhouse energy webinar, and participation in CISA's Climate Change and Farming Week. Newsletter announcements, publicizing CEE's free agricultural energy audits, were distributed through multiple agricultural networks, and meetings were coordinated with Massachusetts dairy and cranberry grower associations. Several energy audits were initiated with farms across the state. Additional producer inquiries were received and responded to throughout the quarter. Federal and state coordination continued through participation in clean energy working groups and electricity policy forums.

Offshore Wind and Wildlife Research & Collaboration

Prime Funding: Regional Wildlife Science Collaborative for Offshore Wind (RWSC)

Through a funded contract, CEE senior research fellow Zara Dowling serves as coordinator for RWSC's Bird and Bat Subcommittee, coordinating and facilitating research and information-sharing on issues relevant to offshore wind energy and bird and bat conservation along the U.S. Atlantic Coast.

The Bird and Bat Subcommittee was on a hiatus over the summer months. We reconvened with a meeting in September. Feedback on draft acoustic monitoring guidance for birds was shared with meeting participants, as well as the structure and input requests for a new draft guidance document on radar and lidar use for bird/bat studies offshore. During the summer, we work with NYSERDA-funded BRI staff to develop workplans for two Subcommittee working groups – the Marine Bird Distributions working group and Bird and Bat Tracking working group.

U.S. DOE Offshore Wind Academic Center for Reliability and Resilience of Offshore Wind (ARROW) Center of Excellence

Prime Funding: U.S. Department of Energy, Mass Clean Energy Center

The Wind Energy Center at UMass was selected to lead the Academic Center for Reliability and Resilience of Offshore Wind (ARROW), a multimillion-dollar national Center of Excellence to accelerate reliable and equitable offshore wind energy deployment across the nation and produce a well-educated domestic offshore wind workforce. The Center of Excellence includes 7 other academic institutions and 3 national laboratories. CEE supports the educational mission of the ARROW scope of work.

CEE Max Dilthey and Dwayne Breger presented on the OSW Professional Certificate to the ARROW leadership team and discussed opportunities for ARROW graduate students from the member universities to register for the on-line courses. Just after this reporting period, in early October, UMass received an award termination notice from U.S. DOE, responsive to the federal administration's rejection of offshore wind. ARROW remains active with MassCEC and state of Maryland funding but has started a process of internal examination of its tasks, available budgets, and funding options.

Green Communities and Municipal Support

In this section, we provide updates and progress on our activities directly serving Massachusetts municipalities in coordination with the Green Communities program. These activities are funded by DOER under the scope of our ISA.

MassEnergyInsight Technical Support

Prime Funding: OptiMiser, as subcontract with DOER Green Communities

CEE provides user support services to Green Communities MassEnergyInsight (MEI) users in partnership with DOER and OptiMiser, LLC.

During this quarter, CEE successfully addressed 78 requests for user support across 46 municipalities and other entities. CEE participated in 10 regular team meetings with DOER and OptiMiser. We published 2 user newsletters and continued ongoing efforts to keep documentation up to date, including the online FAQ, and hosted the first of four online office hours sessions to assist users prepare to submit their Green Communities Annual Reports. We attended and provided supporting information during MESM Academy Training: DOER Green Communities and MEI Essentials. We continued the hiring process for a new, full-time *Municipal Clean Energy Extension Educator* position, which is intended to include responsibility for day-to-day MEI support. CEE is pleased to be able to continue our MEI technical support under the new 3-year contract between DOER and OptiMiser, effective July 1, 2025.

Other Municipal Support

This quarter, we continued to advise on the development of the Massachusetts Community Greenhouse Gas Inventory Tool and Climate Goals Tracker by a Zana Cranmer at Bentley University (<https://ma-ghgi-tool.streamlit.app>), which was launched in a Massachusetts Climate Action Network webinar on September 8, and we contributed to her analysis of communities with high rates of adoption of heat pumps and solar.

Other Project Activities and Initiatives

In this section, we provide updates and progress on projects and initiatives that CEE pursues using funding primarily supported under the scope of our ISA.

ASTGU (Dual-Use Solar) Pre-determination Application Review for DOER SMART

During this quarter, CEE and extension staff began the review of one dual-use pre-determination application.

Pollinator-Friendly Solar Certification Program

CEE's Pollinator-Friendly Solar Certification Program encourages the establishment of native plants and other ecologically friendly practices at solar PV facilities to benefit pollinators and other wildlife. Certified sites become eligible for the Pollinator Adder in the state's SMART solar incentive program.

During this reporting period, we conducted mid-summer and fall vegetation surveys at seven pollinator-friendly solar facilities that have completed three growing seasons of vegetation establishment. We also conducted comparable surveys at seven conventional solar facilities to allow for comparisons in vegetation composition and growth. In addition, through a UMass CAFE funding opportunity, an undergraduate summer scholar retrieved and analyzed data from 40 trail cameras and 20 audio-recorders deployed at conventional and pollinator-friendly solar sites to better understand wildlife use of these sites. This research is expected to continue through 2026.

Clean Energy in the Cultural Sector

CEE is assisting the UMass Arts Extension Services (AES) to support their project funded by a *MassCEC FY23 and FY25 EmPower Massachusetts Innovation & Capacity Building Grant*. The project is working with Massachusetts non-profit small arts and cultural organizations in their clean energy transition, resiliency, and community and sustainability goals. CEE is providing technical support on an organizational and site survey to understand organizational goals and collect energy data.

During this period, CEE assisted AES in selecting 7 cultural organizations to form this EmPower cohort, and we participated in a kick-off meeting with the cohort on September 24 in Holyoke. We assisted in hiring a recently graduated student to support this work and have engaged in the in-depth interviews and data collection from each of the organizations.

Business and Community Outreach and Support

The Clean Energy Extension staff held substantive direct interactions with the following businesses, state entities, and other organizations.

Entity and Attendees	Date and Format	Extension Staff	Purpose and Outcomes
Center for EcoTechnology (CET)	July 1, Virtual	Pelaia	Meeting with CET for program familiarization.
DOER	July 2, Virtual	Pelaia, Breger	Meeting with Gerry Bingham of DOER to discuss three-phase power access.
American Farmland Trust (AFT)	July 3, UMass Amherst	Pelaia	Meeting with AFT to publicize and spread awareness of free ag energy audits.
Pioneer Valley Clean Energy Climate Action group	July 7, virtual	Breger, Dowling, Pelaia	Discussed UMass CEE current work with regional climate action volunteers/leaders
NRCS-MA	July 9, Virtual	Pelaia	Meeting with NRCS-MA to coordinate agreement expectations.
Sustainable Energy Advantage	August 7, virtual	Breger, Dowling	Provided feedback on DOER solar bylaw topics
The Landbanking Group, National Grid	August 11, virtual	Dowling	Discussed UMass wildlife monitoring efforts at solar sites and potential for collaboration
Commonwealth Beacon, reporter Bhaamati Borkhetaria	August 15, virtual	Breger	Interview for article on Agrivoltaics
CBI, consultants for US government	August 18, virtual	Dowling	Provided information about bird/bat tracking efforts in the coastal US related to offshore wind development
MA Climate Office Regional Listening Session – Ashfield, MA	September 9, Double Edge Theatre	Breger, with Arts Extension Service	Engaged in listening and networking session with Climate Chief Hoffer and others.
New England Restructuring Roundtable	September 19, Marston Hall	Breger, Pelaia	Co-hosted watch party of livestream for UMass faculty and graduate students.
Mount Grace Land Conservation Trust	September 24, UMass Amherst	Pelaia	Coordinated with Mount Grace to publicize free energy audits with historically underserved farming communities.
Culture for Climate Action: Clean Energy in the Cultural Sector - Cohort Kickoff Meeting	September 24, MA Green High Performance Computing Center, Holyoke	Breger, Arts Extension Service	Kick-off meeting for cohort of cultural organization for MassCEC EmPower grant.
Cape Cod Cranberry Growers' Association (CCCGA)	September 26, Virtual	Pelaia	Coordinated with CCCGA to publicize free ag energy audits and participate in Board Meeting.

Entity and Attendees	Date and Format	Extension Staff	Purpose and Outcomes
Community Involved in Sustaining Agriculture (CISA)	September, Virtual / In-Person	Pelaia	Coordinated with CISA to participate in 'Farming Week' events and publicize free energy audits in newsletter.

Public Events and Outreach Activities

In this section, we itemize significant public-facing events and outreach activities in which CEE participated.

Event	Date and Location	Extension Presenter/ Attendee	Presentation Title/Topic	Audience	Estimated Attendance
MassCEC Offshore Wind Works Community of Practice	July 9, Southeastern Regional Vocational Technical HS, Easton, MA	Breger	Networking and update on OSW Professional Certificate	OSW Community of Practice	40
Mass Climate Action Network – launch of Climate Goals Tracker	September 8	Mattison			50
RWSC Bird & Bat Subcommittee meeting	September 23	Dowling	Working group workplans, avian acoustic monitoring guidance, radar/lidar for birds/bats overview	Bird/bat researchers, offshore wind industry, eNGOs, state and federal agency staff	50
MESM Academy Training: DOER Green Communities & MEI Essentials	September 29	Mattison		MEI Support	50
Massachusetts Fruit Growers' Association (MFGA) Annual Summer Meeting	July 15, Honeypot Hill Orchards	Pelaia	CEE Free Energy Audits	MFGA	200
Early Fall Greenhouse Lunchtime Webinar 2025	September 9, Virtual	Pelaia	Federal and State Incentive Programs	Massachusetts Flower Growers' Association	30
CISA Climate Change and Farming Week - "Climate Stress and Grief: Building Understanding and Resilience"	September 23, Rutland, MA	Pelaia	CEE Free Energy Audits	MA Farmers	10

Event	Date and Location	Extension Presenter/ Attendee	Presentation Title/Topic	Audience	Estimated Attendance
CISA Climate Change and Farming Week - "Feeding the Future: Innovation, Equity, and Climate Resilience in the Food System"	September 24, UMass Amherst	Pelaia	CEE Free Energy Audits	MA Farmers / UMass Faculty	100
CISA Climate Change and Farming Week - Walking tour at Barstow's Longview Farm	September 25, Hadley, MA	Pelaia	CEE Free Energy Audits	MA Farmers	20

Prospective Activities and Proposals

In this section, we provide updates and progress on proposals and collaborations that CEE pursues for prospective funded work to support CEE directly or in collaboration with activities led by other units on campus.

Rural Climate Partnership

CEE submitted a Letter of Interest to the Rural Climate Partnership providing a general overview of CEE’s activities and proposed efforts aligned with the rural mission of the foundation.

University-based Proposals and Initiatives

- CEE is engaged in university programs and initiatives, including:
- Energy Transition Institute, Steering Committee
 - Wind Energy Center, Advisory Committee
 - ELEVATE (graduate energy transition research program)
 - Chancellor's Sustainability Advisory Committee, Decarbonization Subcommittee

Student Engagement

In this section, in keeping with our mission to support students and workforce development, we list graduate and undergraduate students who have engaged with CEE during reporting period. Given confidentiality concerns, we provide only the students’ initials in this publicly accessible report.

Student Initials, Status	Department	Extension Staff Mentor	Project Description
M.D., Graduate Student	Environmental Conservation	Breger	Support pedagogy and instruction of OSW Certificate program courses.
K.O., Graduate RA	Landscape Architecture	Dowling	Assist with vegetation surveys at solar PV facilities
C.Z., undergraduate summer scholar	Environmental Conservation	Dowling	Study wildlife use of solar arrays using trail cameras and audio recorders

Student Initials, Status	Department	Extension Staff Mentor	Project Description
L.P., Undergraduate	University of Minnesota - College of Food, Agriculture, and Natural Sciences	Pelaia	Engineering guidance on energy use in greenhouses.