UMASS CLEAN ENERGY EXTENSION

Quarterly Progress Report to
MA Department of Energy Resources

Period ending December 31, 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 October 1, 2025 to December 31, 2025.

During this reporting period, CEE completed the hiring of Barry Fradkin as our new Municipal Clean Energy Extension Educator. Barry most recently comes from serving as the sustainability planner for the Massachusetts Port Authority, and he brings substantial experience and expertise to CEE on municipal planning and GIS. We are pleased to welcome Barry.

Of special note, this progress report is the last one submitted under CEE founding director, Dwayne Breger, as Dr. Kira Lawrence will assume leadership of the program starting January 2026. Kira brings extensive experience in clean energy policy, climate science, and sustainability leadership. For the past five years, at the New Jersey Board of Public Utilities (BPU), Kira served in the Division of Clean Energy as Senior Scientist, Acting Deputy Director of Offshore Wind, and most recently as Senior Policy Advisor to the President of the BPU. Prior to NJ BPU, Kira was a Professor of Geology at Lafayette College, where she also served as faculty lead on Lafayette's second Climate Action Plan. Kira holds degrees in Earth Sciences from Dartmouth College, University of California Santa Cruz, and Brown University, where she earned her PhD. CEE, and the broader UMass community, are thrilled to have Kira join us, and we look forward to her work with DOER and the Commonwealth to lead the next phase of the Clean Energy Extension.

Externally Funded Project Activities[1]

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

[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.

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.

This quarter, our team continued data analysis and submission of journal publications. We held our final meeting of the Project Advisory Committee. We tested the online choice experiment design with UMass students. The primary research efforts under this project were completed by the December 31st end of project, and work continues in coordination with DOE during a project closeout period through March 31st. For this closeout, the research team will complete data analysis, final publications, and a Final Technical Report. We continue to submit required 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 concluded 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. This semester represents the final semester for this second cohort under this award, and thereby CEE will be closing out this award with MassCEC.

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, we reached out to our contacts in the port cities, and undertook the recruitment and application process for new Access Scholars for the Spring 2026 semester. We received 35 applications, forwarding 25 qualified candidates to the Selection Committee. Based on the Selection Committee's recommendations, scholarships were awarded to 5 applicants, including 4 women, 2 residents of Environmental Justice Communities, 2 people with disabilities, 2 BIPOC, one LGBTQIA+, and one veteran.

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.

CEE's Agricultural and Energy Engineering Assistance program transitioned from foundational development into active service delivery during the fourth quarter of 2025. The period was characterized by sustained producer engagement, completion of professional credentialing requirements, and expansion of technical resources responding to evolving federal and state renewable energy program landscapes.

Professional development advanced significantly with successful completion of the Association of Energy Engineers Certified Energy Auditor examination in early November, fulfilling requirements to deliver energy audits eligible for federal conservation funding. Technical Service Provider (TSP) registration training was completed in December, positioning CEE for inclusion in the NRCS Technical Service Provider registry. TSP registry listing will enhance program discoverability, allowing Massachusetts producers and NRCS field staff to identify UMass Clean Energy Extension as an available resource for agricultural energy assessments and expanding potential clientele reach.

Direct producer engagement remained consistent throughout the quarter, with energy audits conducted across diverse agricultural operations including greenhouse facilities, fruit operations, grain handling systems, and specialty crop production. Site visits and consultations addressed energy efficiency improvements, motor replacements, renewable energy planning, and coordination of federal, state, and utility incentive programs. Several producers were connected with NRCS field staff to initiate EQIP enrollment processes, while others were supported in pursuing parallel funding pathways through MDAR and utility programs.

Partnership development continued with agricultural organizations and commodity groups. Presentations to the UMass Extension Board of Public Overseers and direct engagement with the Cape Cod Cranberry Growers Association expanded program visibility within targeted producer communities. Coordination with regional extension programs and participation in grower networks strengthened referral pathways and enhanced understanding of sector-specific energy needs.

Resource development activities accelerated in response to substantial producer interest following Massachusetts SMART 3.0 program updates and recent USDA REAP eligibility modifications. New web-based materials addressing solar energy development, agrivoltaics implementation requirements, and coordination of federal, state, and utility incentive programs were developed to support informed producer decision-making. Updated fact sheets and reorganized web resources improve producer access to current program information and reflect the rapidly changing renewable energy policy landscape.

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.

This quarter the Bird & Bat Subcommittee held two meetings (October, December) which addressed recently funded/conducted bird and bat research projects (October) and approaches to conducting avian vulnerability assessments (December). CEE staff also participated in development of interim guidance on bird/bat tagging and tracking offshore, as well as completing drafting of an overview of radar/lidar use for studying birds and bats offshore.

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 continues to participate in ARROW leadership team meetings. As federal funds have been rescinded, effort this quarter has been focused on securing continued support from MassCEC and the Maryland Energy Office.

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 106 requests for user support across 65 municipalities and other entities. CEE participated in 12 regular team meetings with DOER and OptiMiser. We continued ongoing efforts to keep documentation up to date, including the online FAQ, and hosted three online office hours sessions to assist users prepare to submit their Green Communities Annual Reports. We completed the hiring process and began training Barry Fradkin as our new, full-time *Municipal Clean Energy Extension Educator*, whose work includes responsibility for day-to-day MEI support.

Other Municipal Support

This quarter, CEE initiated work with the Town of Conway to carry out a solar planning process using CEE's *Community Planning for Solar* toolkit. CEE staff are also working on updating toolkit factsheets, guides, and resources, as well as associated websites with solar information targeted at municipalities. As part of this effort, CEE staff compiled and reviewed the latest draft regulations related to clean energy facility sitting, and reviewed the updated guidelines for SMART 3.0, including site suitability calculations and data sources.

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 finalized the review of one dual-use pre-determination application and began the review of 4 applications; one of the applications was a revision of a previously submitted 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 completed fall vegetation surveys at pollinator-friendly solar facilities, as well as conventional solar facilities studied for comparison. We communicated with several solar developers interested in participating in our certification program about the application process. We also retrieved and processed data from acoustic detectors and trail cameras deployed at conventional and pollinator-friendly solar sites.

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 worked with AES and other project staff to tabulate and analyze utility bill data for each of the cultural organizations. This analysis will help inform potential options to reduce energy use, customized to each organization. CEE staff also participated in interviews with each member of the EmPower cohort to learn more about their priorities, ongoing plans and funding sources, and energy use and efficiency improvements. The project team also hosted a second meeting with all the cohort members for an update on the process, presentation of case studies, and opportunities for solar PV deployment.

UMass: Decarbonization Subcommittee of the Chancellor's Sustainability Advisory Committee

Dwayne Breger represents CEE on the Decarbonization Subcommittee of the Chancellor's Sustainability Advisory Committee. This subcommittee is charged with supporting the University's effort and commitment to decarbonize the campus in alignment with Massachusetts EO 594 and as a living lab for research, education, and community engagement.

During this reporting period, the subcommittee met four times. The primary activity over this period has been to scope and draft an RFP for a consultant team to work with UMass and the subcommittee on a new campus decarbonization plan. The RFP was issued in early January.

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
Gore Estate	October 1, Virtual	Breger, Pelaia, Dowling, Kraus	Met with representatives of Gore Place and the City of Watertown to discuss the viability of agrivoltaics on a non-profit historic site.
Barstow's Longview Farm	October 10, In-Person	Pelaia	Conducted site visit to assess electric pump and variable frequency drive installation for slurry distribution system and provide technical assistance supporting producer's application for MDAR MFEP funding.
UMass Extension Board of Public Overseers	October 15, In-Person	Pelaia	Presented agricultural energy auditing services and NRCS conservation practices to board members and cranberry station personnel
MassCEC Offshore Wind Works Community of Practice Meeting	October 23, Virtual	Dilthey, Breger	Participated in meeting and provided update on CEE and the Offshore Wind Graduate Certificate program.
Red Apple Farm	October 28, In-Person	Pelaia	Conducted comprehensive energy audit site visit to identify energy efficiency improvement opportunities and provide technical recommendations supporting producer pursuit of federal and state conservation funding programs.
Dusty Goat Farm	October 28 and November 16, In-Person	Pelaia	Conducted comprehensive energy audit site visit to identify energy efficiency improvement opportunities and provide technical recommendations supporting producer pursuit of federal and state conservation funding programs.

Entity and Attendees	Date and Format	Extension Staff	Purpose and Outcomes
Cape Cod Cranberry Growers' Association	November 4 and 10, Virtual	Pelaia	Establish partnership and publicize free agricultural energy auditing services to cranberry growers across the Cape Cod region through the association's communication channels and field staff referral network.
XFlow Energy	November 4, Virtual	Pelaia	Met with Massachusetts-based wind turbine manufacturer to explore on-farm renewable energy development opportunities eligible for USDA Rural Energy for America Program (REAP) funding.
Five Point Farm	November 5, In-Person	Pelaia	Conducted comprehensive energy audit site visit to identify energy efficiency improvement opportunities and provide technical recommendations supporting producer pursuit of federal and state conservation funding programs.
UMass Boston, Sustainable Solutions Lab	November 25, Virtual	Dilthey, Breger	Discussed workforce development strategies and collaboration with Balakrishnan Balachandran, Climate Careers Curricula Initiative (C3I)
MA Energy Efficiency Partnership Training	December 4	Fradkin	Participated in Building Management Systems training.
Pleasant Valley Gardens	December 11, In-Person	Pelaia	Conducted comprehensive energy audit site visit to identify energy efficiency improvement opportunities and provide technical recommendations supporting producer pursuit of federal and state conservation funding programs.
MassCEC Offshore Wind Works Education Working Group	December 11, Virtual	Dilthey, Breger	Participated in inaugural meeting of the Working Group and provided background on CEE and the Offshore Wind Graduate Certificate program.
Grid Modernization Advisory Council Workshop	December 12, In-Person at UMass	Fradkin	Attended the Future Grid from a Municipal Lens and New Customer Connections Workshop
Hartsbrook School, Hadley, MA re: campus energy planning	December 12, Virtual	Breger	Met with faculty and student team to assist the planning for a campus decarbonization plan. Provided key stakeholders, state/utility programs, and organizational allies to help get started.
National Agrivoltaics Research Network	December 18, Virtual	Breger	Planning meeting for NREL led national research network on agrivoltaic.

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
RWSC Bird & Bat Subcommittee meeting	October 28	Dowling	Working group updates; presentations from recently funded	Bird/bat researchers, offshore wind	50

Event	Date and Location	Extension Presenter/ Attendee	Presentation Title/Topic	Audience	Estimated Attendance
			or recently completed bird/bat research studies offshore	industry, eNGOs, state and federal agency staff	
Hearing with MA Society of Professors on DRIVE Act	October 30, State House, Boston	Breger	Testimony on the impacts of federal funding shifts on UMass and CEE	Joint Committee on Economic Development and Emerging Technologies	15
ACT Webinar: Reimagining Community Colleges as Catalysts for the Clean Energy Workforce	November 12, virtual	Breger	CEE held discussion with speaker Pam Eddinger, President of Bunker Hill Community College	Alliance for Climate Transition (ACT) members	25
RWSC Bird & Bat Subcommittee meeting	December 9	Dowling	Working group updates; presentations on approaches to avian vulnerability assessments to offshore wind development	Bird/bat researchers, offshore wind industry, eNGOs, state and federal agency staff	50

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. CEE awaits a decision on this submission.

Griffin Pelaia was listed as Co-Principal Investigator on a project proposal submitted to the USDA Agriculture and Food Research Initiative (AFRI) focused on bird deterrent research for agricultural applications. The proposal was not approved for funding.

University-based Proposals and Initiatives

CEE is engaged in university programs and initiatives, including:

Energy Transition Institute, Steering Committee
Wind Energy Center, Advisory Committee
Chancellor's Sustainability Advisory Committee, Decarbonization Subcommittee
School of Earth and Sustainability
ELEVATE (graduate energy transition research program)

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 research assistant	Environmental Conservation	Dowling	Study wildlife use of solar arrays using trail cameras and audio recorders