UMASS CLEAN ENERGY EXTENSION

Quarterly Progress Report to
MA Department of Energy Resources

Period ending June 30, 2026

Contact: *Kira Lawrence, Director, ktlawrence@umass.edu 413-545-8511*

This Progress Report provides a summary of work accomplished by the UMass Clean Energy Extension (CEE) during the period April 1, 2026 to June 30, 2026.

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

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.

Last quarter marked the closeout period for this project, with minor tasks remaining this quarter. Our Final Technical Report (submitted to DOE last quarter) was approved by DOE at the end of this quarter, and will be made publicly available by DOE and will be posted on our CEE website. Publications, fact sheets, and conference presentations are listed and linked from the following project web page: https://www.umass.edu/agriculture-food-environment/clean-energy/research-initiatives/agrivoltaics/researching-agricultural-economic-impacts-of-dual-use-solar/u-s-doe-funded

CEE and the research team plan to contact DOER and MDAR to discuss this work and outcomes further. We continue to support the DOE Solar Energy Technologies Office on their broader agrivoltaics efforts.

[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.

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 Spring 2026 program course (ECO 611 *Offshore Wind Energy: Environmental Impacts, Siting, Permitting, and Stakeholder Engagement*), with enrollment of 9 students, as well as the Summer 2026 course, ECO 612 *Offshore Wind Energy: Project Economics, Deployment, and Business Logistics,* with enrollment of 8 students. This represents a significant reduction in enrollment compared to our typical numbers, as anticipated given the federal government's recent efforts to curtail offshore wind development in the United States. 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 have emphasized the development of skills and knowledge relevant to other fields within the clean energy sector, such as on-shore renewable energy generation and transmission.

CEE Staff has continued to conduct outreach efforts to recruit additional students into the program, including ongoing participation in industry newsletters and collaboration with partner organizations including the Environmental League of Massachusetts (ELM), New England for Offshore Wind (NE4OSW), Salem Alliance for the Environment (SAFE), and the Clean Energy States Alliance (CESA).

CEE is additionally preparing for the Fall 2026 semester course ECO 610 *Offshore Wind Energy: Technology, Resources, Grid Integration, and Trends*, slated to begin in early September. Outreach will be conducted to secure new and returning guest instructors. CEE expects a cohort of at least 12 students with potential to include an additional 10 students from Humboldt County, CA.

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, a first cohort of 5 scholarship students completed the Spring 2026 semester and began the Summer 2026 semester. This cohort includes 4 women, 2 residents of Environmental Justice Communities, 2 people with disabilities, 2 BIPOC, one LGBTQIA+ individual, and one veteran. We provided a support session to students as well as one-on-one support, and CEE additionally provided one student with funding for a laptop needed to successfully participate in the program.

CEE continued to develop networks across Massachusetts, with special attention to Salem and New Bedford as port communities of critical interest to the OSW industry. We received 17 applications for the Fall 2026 Career Access Scholarship round and prepared for a Selection Committee meeting in July. Our outreach strategy for this scholarship built upon past semesters, with a growing list of 50+ partner organizations, newsletters, social media pages, and direct referrals.

Kira Lawrence made a trip to New Bedford as part of the ARROW Summer Education Accelerator, which was hosted by UMass Dartmouth. While there, she connected with several important New Bedford-based contacts. She visited the Bristol Community College National Offshore Wind Institute (NOWI) training facility and met with Director Tim Brown. She also had productive introductory conversations with Jennifer Downing, Executive Director of the New Bedford Ocean Cluster (NBOC), and Gordon Carr, Executive Director of the Port of New Bedford.

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, we worked to fill the farm energy assessor position, left vacant when our previous full-time staff member devoted to this project left CEE in May. The new position will accommodate an employee working part-time indefinitely or full-time for 1 year, in either case fulfilling our obligation under the grant. This will no longer be a shared position with a half-time portion funded by the UMass Center for Agriculture, Food, and the Environment, but rather will primarily focus on meeting the obligations of the grant and supporting other CEE related efforts. The job description was posted in early June, and a search committee was formed. We received a strong response from interested applicants. Application reviews began in late June, with a first round of interviews slated for early July. Energy audits and assessments are on hold until the position is filled.

Before his departure during the first month of this period the full-time staff member devoted to this project completed 5 farm energy audits. These audits covered a diverse range of operations including greenhouse production, grain handling systems, orchard and cidery operations, and specialty crop production. Recommended measures included heating and hot water system improvements, irrigation pump replacement, refrigeration system retrofits, greenhouse improvements, and building envelope upgrades, as well as recommendations regarding specialized equipment for specific operations. Site visits were completed on two additional farms, with consultations and/or contact or made with nine other farms. A prioritized list was made for the new hire to re-engage with farms. Farms who had made contact with CEE, but not yet received audits, were contacted to alert them to the departure of the primary staff member

working on this project and to let them know his replacement would reach out in a few months.

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 three meetings (April, May, June). These meetings, led by Zara Dowling, included updates on working group progress, presentations and discussion regarding innovations in long-distance bat tracking (including tag technology and tag attachment), and the use of acoustic detectors and multi-modal systems for offshore bird and bat monitoring at wind facilities.

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.

Kira Lawrence continues to serve as a member of the ARROW Advisory Committee participating in Advisory Committee Meetings and ARROW activities. Kira also attended the ARROW Summer Education Accelerator (SEA) held in May at UMass Dartmouth School for Marine Science and Technology (SMAST), along with other Advisory Committee members and students from across the collaborating institutions. SEA included 1) tours of the South Fork Wind Farm and SMAST, 2) lectures and educational programming about offshore wind related science/engineering/policy, and 3) an opportunity to mentor participating students and to network with colleagues and students from other institutions and well as New Bedford offshore wind related entities. In June the Advisory committee made initial plans for the ARROW-FLEx program for the coming academic year. This program is aimed at knowledge sharing and involves ARROW faculty visiting other institutions that are part of the ARROW project and sharing their expertise with students and colleagues through guest lectures in relevant courses and through engagement with ARROW faculty.

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 66 requests for user support across 42 municipalities and other entities. CEE met virtually with Franklin Regional Council of Governments (FRCOG) staff to address MEI account and data issues for the Town of Leyden. CEE participated in 12 regular team meetings with DOER and OptiMiser. We continued ongoing efforts to keep documentation up to date, including the online FAQs. We continued work on major updates to MEI training content, completing and posting the first two of a series of new videos at https://massenergyinsight.net/training-videos.

Other Municipal Support

This quarter, we gave a presentation about CEE services and an overview of clean energy siting and incentives to municipal and regional planning staff at Pioneer Valley Planning Commission's (PVPC's) quarterly Clean Energy Climate Action Group meeting in April. We also provided support to several municipalities individually. CEE staff met virtually with staff from the Town of Erving to help troubleshoot issues related to solar PV production and energy use at the public library. We continued work with the Town of Conway on their community planning for solar process, distributing an electronic survey to residents regarding their perspectives on solar in their community. We reviewed proposals the Town of Orange received in response to a published Request for Proposals for solar development at the town's capped landfill site. Finally, we continued to collaborate with Bentley University to support development of their Massachusetts Community Greenhouse Gas Inventory Tool (specifics detailed below).

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 coordinated with colleagues from the agricultural extension to complete collaborative reviews of 5 dual-use pre-determination applications (one of which was a revision of a previously submitted application) and initiated the collaborative review of 4 additional applications.

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 certified one pollinator-friendly solar facility and spoke with several developers and plan preparers about the certification process. We conducted spring vegetation surveys at seven pollinator-friendly solar facilities where monitoring is required this year for re-certification. We also conducted vegetation surveys at a number of pollinator-friendly and conventional solar facilities to better understand vegetation management and improve our program. In addition, we retrieved and processed data from trail cameras deployed at conventional and pollinator-friendly solar sites. We conducted joint site visits and loaned equipment to a Clark University graduate student conducting avian research at a subset of solar facilities.

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 contributed to finalizing a clean energy and energy efficiency opportunity matrix for each cohort member. CEE staff helped to present shared opportunities for decarbonization during the 3rd meeting with the full cohort of arts and cultural organizations. CEE also provided input on documentation of high-priority decarbonization actions for each organization and helped update the list of funding and financing resources for energy efficiency retrofits and renewable energy projects.

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, consulting firm RMF Engineering and the Decarbonization Committee held a campus kickoff event in April. RMF then pursued their charge of evaluating the technical and cost feasibility of potential decarbonization strategies for UMass Amherst by working with the Decarbonization Subcommittee to gather information from subject matter experts (SMEs) and analyzing relevant campus data. Dwayne Breger continues to co-chair the campus decarbonization committee and participated in and helped facilitate engagement with SMEs as well as assist in planning an on-campus July workshop to discuss initial findings and

gather input from campus stakeholders. Kira Lawrence participated in the SME discussion on geothermal as a potential clean energy source for campus. Kira and Dwayne are working in collaboration with Brian Yellen, MA State Geologist and faculty in Earth, Geographic, and Climate Sciences to prepare a phased plan to advance deep, enhanced geothermal energy to serve the campus and regional New England carbon reduction needs. We have had discussions with MassCEC on advancing this technology.

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
Greenfield Community College Workforce Development Team	April 2, virtual	Lawrence, Dilthey	Met with GCC Workforce development team about potential collaboration on clean energy workforce training
Energy Transition Institute Meeting with Senator Comerford	April 3, virtual	Lawrence, Mattison	ETI affiliated faculty and researchers met with Senator Comerford about pending energy related legislation
Lucy Atkinson, MIT graduate student	April 6, virtual	Dowling	Shared experiences regarding municipal planning and permitting for solar to inform development of community benefits agreement guidebook for municipalities
Energy Transition Institute Meeting with EEA Secretary Tepper	April 10, UMass Amherst	Lawrence	Directors from major UMass energy and climate program shared an overview of their programs. Lawrence highlighted ways CEE's efforts might support EEA's climate mitigation and resiliency efforts.
DOER staff	April 10, virtual	Dowling	Met with DOER staff to coordinate on solar facilities eligible for Pollinator Adder in SMART program
Bristol Community College Workforce Development Team	April 16, virtual	Lawrence, Dilthey	Met with BCC Workforce development team about potential collaboration on clean energy workforce training
Tufts University Civil and Environmental Engineering Department	May 5, In-person	Lawrence	Met with Eric Hines and other Tufts faculty who work in energy and environment related disciplines to discuss potential future collaborations; provided feedback to master's degree students on their capstone project about rising energy costs.
MassCEC Wind Works Community of Practice Meeting	May 6, in person	Lawrence	Attended presentations, participated in discussions and networked with other community of practice members.
Franklin Regional Council of Governments staff	May 11, Virtual	Dowling, Fradkin, Lawrence, Mattison	Met with FRCOG staff to check in on areas of overlap and avenues to assist municipalities with clean energy planning and implementation
DOER Green Communities Division	May 26	Mattison, Dowling, Fradkin, Lawrence	Check in on collaboration opportunities

Entity and Attendees	Date and Format	Extension Staff	Purpose and Outcomes
Lodestar Energy: Joshua Briggs, Thomas Lee, Jack Funk	June 18	Kraus	Review applicant questions for ASTGU dual use application for DA Farms
Black Swan Development: Rory Walker, Pedro Rodriguez; United Agrivoltaics: Kristian Woodell, Caleb Scott; Chris Balogh	June 23	Kraus	Discussion regarding dual-use ASTGU on a site in Amesbury

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
MassEnergize Annual Conference	April 8, Bentley University	Fradkin	N/A (attended but did not present)	Municipal energy staff and volunteers	300
Energy Transition Symposium	April 10, UMass Amherst	Kraus, Lawrence	Cosponsored keynote speaker and poster session	UMass Amherst campus community	100+
PVPC Clean Energy Climate Action Group quarterly meeting	April 28, virtual	Fradkin, Dowling	Presented on CEE resources and recent changes to clean energy siting and incentives	RPA staff, municipal energy managers	20
RWSC Bird & Bat Subcommittee	April 28, virtual	Dowling	Offshore wind/wildlife research – working group updates	Offshore wind developers, state and federal agencies, eNGO staff, researchers	50
Nunez Community College Wind Energy Technology Advisory Board Meeting	April 29, virtual	Dilthey	Continuing curriculum and general support of the Nunez Community College wind technician training program	State leaders, LA regional clean energy professionals, institutional staff and leadership	20
Rutgers University Climate Change Research Symposium	May 10, in person	Lawrence	Co-presenter "How to Design a Successful Science and Policy Fellowship Program"	State leaders, climate and energy faculty and students from Rutgers and other academic institutions in the region	30
RWSC Bird & Bat Subcommittee	May 26, virtual	Dowling	Offshore wind/wildlife research – innovations in long-distance bat tracking	Offshore wind developers, state and federal	50

Event	Date and Location	Extension Presenter/ Attendee	Presentation Title/Topic	Audience	Estimated Attendance
				agencies, eNGO staff, researchers	
Embracing Regional Sustainability: Networks for People and Places (EDRA conference)	May 27-30, UMass Amherst	Kraus	Presenter: "Cohousing: a housing model supporting sustainability, resilience, and social connection"; led tour of cohousing communities	Design researchers and educators	15
NYSERDA Offshore Energy, Wildlife, and Fisheries State of the Science	June 8-11, Long Island, New York	Dowling	Offshore wildlife data standardization	Offshore wind developers, state agency staff, academic researchers	150
Drive Electric MA Symposium and EVICC meeting	June 10, AC Hotel Worcester	Fradkin	N/A (attended but did not present)	Municipal and state EV stakeholders	200
RWSC Bird & Bat Subcommittee	June 30, virtual	Dowling	Offshore wind/wildlife research – using acoustics and multi-modal systems to monitor birds and bats offshore	Offshore wind developers, state and federal agencies, eNGO staff, researchers	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.

MassCEC Offshore Wind Workforce Grant Application

CEE submitted a grant application to MassCEC's 2026 Offshore Wind Workforce Grants solicitation in mid April. The proposal focuses on strengthening the Offshore Wind Works Community of Practice (CoP) Network by partnering with other CoP members to recruit Career Access Scholars from their organizations or constituent networks. The emphasis is on recruiting individuals from port communities and specifically those who can contribute to operations and maintenance related industries. The grant applicant also includes a proposal to work with EEA to support the Offshore Wind MOU signed in February by Governor Healy and Premier Houston from Nova Scotia that includes collaborating on workforce development among other key areas. CEE would endeavor to attract cohorts of Nova Scotia based participants to the offshore wind certificate program to support workforce development in the nascent offshore wind industry in Nova Scotia.

MassCEC Equity Workforce Training Implementation Grant Application

In mid-May, CEE with support from the Alliance for Climate Transition and Greenfield and Bristol Community Colleges submitted a grant proposal to MassCEC's Equity Workforce Training Implementation RFP. CEE proposed to work with GCC and BCC to identify and formulate a plan to address career pathway gaps in existing clean energy and energy efficiency programs to better prepare community college students for careers in these sectors. This planning project would focus on identifying common gaps in existing programming, leveraging existing curriculum resources, aligning with community college faculty and administrators along shared goals, and designing a flexible and standardizable curricular delivery model that can be piloted at one or more partner institutions in subsequent phases. This effort would seek to emulate the successful community college-based training models in the healthcare sector, and through collaboration with both community colleges and potential employers support more robust and holistic career pathways in clean energy and energy efficiency over the long-term.

Battery Energy Storage Systems Education and Engagement

As noted in last quarter's report, CEE has engaged UMass Amherst Facilities & Campus Services Office which oversaw the installation of and now operates UMass' BESSs. CEE is now in active discussions with UMass Facilities and the UMass Environmental Health and Safety about the development of some public facing, educational BESS siting and safety videos. CEE will continue to engage with DOER's Renewable and Alternative Energy Division team about this work as it progresses.

Building on this initial work, in late May CEE sent a proposal to DOER requesting funds to facilitate a BESS forum, emulating previous successful CEE-hosted Western MA Solar Forums and a "how to" guide for towns and developers about best practices for engagement on BESS. This proposal was favorably received by DOER leadership who indicated that CEE should prepare a final scope of work and budget so the ISA can be amended to incorporate the addition of this work and the funding requested to complete it.

Community Greenhouse Gas Inventory Tool

CEE continues to collaborate with Bentley University on development of their Massachusetts Community Greenhouse Gas Inventory Tool, including continuing efforts to obtain funding for Bentley and CEE to pursue development, deployment, and support of the tool. This quarter, we assisted with a letter of interest to Barr Foundation's Climate Program. Barr responded that it was not a good fit, as they rarely fund tool development. The team will continue to explore other opportunities to support this work.

University-based Proposals and Initiatives

CEE is engaged in university programs and initiatives, including:

- Energy Transition Institute, Steering Committee
- Academic Center for Reliability & Resilience of Offshore Wind (ARROW), Advisory Committee
- Chancellor's Sustainability Advisory Committee, Decarbonization Subcommittee
- School of Earth and Sustainability Pan-Campus Advisory Council
- 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 the 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	Lawrence	Supporting pedagogy and instruction of OSW Certificate program courses and completing a PhD related to offshore wind
C.Z., Undergraduate Student	Environmental Conservation	Dowling	Conducting independent study analyzing trail camera data from conventional and pollinator-friendly solar arrays
K.O., Graduate Student	Regional Planning	Dowling	Surveying vegetation at pollinator-friendly and conventional solar arrays
A.F., Undergraduate Student	Environmental Conservation	Dowling	Growing native plants from seed to develop guide to basal leaf identification for common wildflowers, to aid in plant surveys at solar facilities