

UMass Clean Energy Extension Pollinator-Friendly Certification Program for Solar PV Arrays

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What is UMass Clean Energy Extension?

- Part of Center for Agriculture, Food, and the Environment (CAFE) at UMass Amherst
- Conducts outreach and applied research
- Focus on renewable energy and energy efficiency
- On-going technical assistance services
- Current initiatives include:
 - Community-driven solar siting and financing
 - Providing information about “dual-use” solar PV and agriculture
 - Offshore wind workforce training
 - Cumulative impacts on wildlife of wind development (with AWWI)
 - Energy storage
 - Reducing fuel use by municipal fleets
 - ...and pollinator-friendly solar PV certification!

Why promote pollinator-friendly solar?

- **It's good for native wildlife and plants:** Native flowering herbs and shrubs provide habitat and food to pollinators and other wildlife species.
- **It's more attractive:** Wildflower meadows and vegetation screens of native shrubs are aesthetically appealing.
- **It's cost-effective:** Native plantings require lower long-term maintenance costs.

Pollinator-friendly criteria used in other states

- Detailed establishment and monitoring plans
- NO INSECTICIDES on seeds, seedlings, or to be used on-site
- Species requirements – flowering, appropriate for habitat, “good” for pollinators
- Appropriate seeding density
- Plant diversity (# of flowering species)
- Seasonal diversity of blooms
- Vegetation screen with native and/or flowering plants
- Creation of nesting habitat
- Signage/education
- Mowing requirements – only once per year, or outside of certain seasons

Additional ideas from Massachusetts certification criteria review board

- Checklist format (like LEED certification)
- Clear distinctions between criteria for establishment and maintenance/monitoring
- No fungicides
- Plants that support specialist species
- Perennial water source
- Limiting nocturnal lighting
- Wildlife considerations

Massachusetts certification criteria – establishment

See website for details:

<https://ag.umass.edu/clean-energy/services/pollinator-friendly-solar-pv-for-massachusetts>

- Establishment and maintenance plan
- Seed mix not pre-treated with insecticide or fungicide
- Amount of seed to be planted based on seed providers' recommendation
- Diversity of species
- Diversity of bloom times
- Seed mixes no more than 25% grasses and sedges
- Trim zone plantings include significant % of flowering plants
- Vegetation screen, if present, includes only native species
- Specialist bee forage plants
- Host plants for rare butterflies and moths
- Fencing gaps to allow wildlife passage
- *Bee nesting habitat*
- *Perennial water source*
- *Educational signage*
- *Habitat for rare wildlife species, bird boxes*

Massachusetts certification criteria – maintenance

See website for details:

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- Mowing no more than once per year, before May 1 or after October 1 (AFTER SITE ESTABLISHMENT)
- During establishment period (first 3-5 years), have botanist flag invasive plants for removal.
- Limit vegetation clearing in trim zone.
- Spot treatment of invasive species with herbicide or weed-whacker is acceptable where needed.
- No insecticide or fungicide use.
- Submit annual request for exclusion from spraying for mosquitoes.
- Maintain log of annual mowing and any other vegetation management activities occurring on site.

Certification Program Components

See website for details:

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- Certification Criteria (Certified, Silver, Gold, Platinum)
- Certification Procedure and Fees
- Best Management Practices Document
- Recommended Plant Species List
- Application Form
- Annual Maintenance Log
- *Monitoring by CEE*

Certification Process

- Application, including Site Establishment & Maintenance Plan
- Application fee
- Review, comments, and revision of Establishment & Maintenance Plan
- Letter of Certification issued

Re-Certification Process

- On-going maintenance according to the Plan
- Submission of Annual Maintenance Log
- Monitoring during fourth growing season
- Payment of re-certification fee
- Adjustment of maintenance activities, if needed
- Monitoring every third growing season thereafter

So far in 2020...

- 7 certified projects, 2 solar development companies
- Berkshire, Bristol, Franklin, Hampden, Worcester counties
- 1.0 – 6.7 MW DC capacity

April 2020 – updated SMART regulation

- Solar incentive adder (\$/kWh) for pollinator-friendly certification
- “A Solar Tariff Generation Unit that obtains and maintains at least a silver certification from the University of Massachusetts Clean Energy Extension Pollinator-Friendly Certification Program, or other equivalent certification as determined by the Department, shall be eligible to receive an additional \$0.0025/kWh Compensation Rate Adder.”

<https://www.mass.gov/doc/225-cmr-2000-final-071020-clean/download>

Expected updates for 2021

- Continued flexibility and adjustments as we work out how to establish these sites
- Remove rare or uncommon plant species from Recommended List
- Review additional research on plants that support specialist bees or Lepidoptera for potential inclusion
- Seed mix by *seed count* only
- Provide recommendations on seeding rates (PLS per sq. ft)
- Clarify language regarding criteria and BMPs
- Provide information regarding geography of plant species by county
- Provide signage with Letter of Certification

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