Siting Clean Energy Infrastructure

Municipal Perspective

SWAP Subregional Monthly Meeting
March 12, 2024
Scale-up of clean energy infrastructure

– Achieving MA climate goals will require substantial scaleup of clean energy infrastructure by 2050

– Clean energy infrastructure (CEI) includes:
  – Renewable electricity generation
  – Energy storage
  – Transmission & distribution facilities
Scale-up of clean energy infrastructure

Substantial increase in renewables deployment and transmission infrastructure to deliver renewable generation from other states

Source: MA 2025 CECP
Scale-up of clean energy infrastructure
Increased grid demand from electrification will drive distribution upgrades

Source: Eversource and National Grid Electric Sector Modernization Plans
Scale-up of clean energy infrastructure

Within next 10 years, three substation upgrades needed in SWAP region—more by 2050
Challenges of clean energy infrastructure scale-up

– Higher land use impacts from renewable generation and infrastructure
– Balance against need to preserve natural and working lands for climate and environmental benefits
– Lengthy and redundant processes for approval
– Avoid perpetuating environmental justice issues
Community Concerns

Big Batteries Are Booming. So Are Fears They’ll Catch Fire
The world needs thousands of new grid battery installations to fight climate change. They rarely catch fire— but many people are skeptical of their stor.

After three fires and a solar plant toxic fumes scare, New York launches safety probe into battery energy storage
State governor sets up Fire Safety Working Group after residents told to stay at home in third recent incident at solar farm

New York governor Kathy Hochul launched a special taskforce to investigate the safety of battery energy storage facilities after a third blaze in the state this year left residents warned to stay indoors.

Fire and explosion injures Eversource worker at power substation in Newton, leaves thousands without power, according to fire department

Updated: Jun. 21, 2022, 9:33 a.m. | Published: Jun. 21, 2022, 9:02 a.m.
Community Concerns

Mass. can expand solar without chopping so much forest, report says

Solar developer fined $1.14M for wetlands damage in Williamsburg

It’s cheaper to cut down trees than build solar on rooftops. Can Massachusetts change that?

_A bill supported by environmental and clean energy groups would adjust Massachusetts’ solar incentives to make rooftop, parking lot, and other projects on developed sites more financially feasible._
Typical Local Processes in CEI Siting

- **Planning and Zoning:** Ensure project and construction meets community goals and requirements for land use
- **Permitting:** Code and other regulatory compliance
- **Historic District Commission:** Ensures modifications to historic properties are appropriate to preserve historical character
- **Conservation Commission:** Ensure protection of natural resources
- **Board of Health:** Public health, hazardous materials, and noise
- **Select Board / Council:** Utility poles, tree and other hearings
- **Engineering:** Curb cut /right of way changes
- **PILOT** (payment in lieu of taxes) and **Community Benefits Agreements**
Planning and Zoning

– Planning Boards and Zoning Boards of Appeals

– Zoning bylaws establish regulations for solar PV installations
  – DOER Model Solar Bylaw adopted by over 180 MA communities
  – Some municipalities lack guidance on solar parking canopies

– More limited zoning bylaws for storage:
  – Where bylaws exist, typically more detailed requirements for commercial and utility-scale systems (capacity-based requirements)
  – Smaller residential systems often allowed by right
  – DOER working on model storage bylaw

– Often requires site plan approval and special permits for large projects
Planning and Zoning

- EFSB and DPU can exempt projects from local zoning
- MGL Ch. 40a, Sec. 3 prevents zoning ordinances/by-laws that "prohibit or unreasonably regulate [solar installations] except where necessary to protect public health, safety or welfare."
  - Tracer Lane case first SJC interpretation of 40a, Sec 3.
  - Does not protect other distributed energy resources, though AG has ruled that standalone energy storage qualifies as “structures that facilitate the collection of solar energy” under 40A, Sec 3 in invalidating zoning bylaws that ban or overly restrict storage
  - DPU rulings deemed two large utility-scale storage as public service corporations in Carver and Medway in June 2023
Case Study: Medway Grid

- Nov 2021: Medway town meeting imposes temporary moratorium on BESS construction in ER zoning district until 6/30/23
- Feb 2022: Medway Grid files with EFSB for zoning exemptions
- Sep 2022: Medway Grid signed host community agreement w/ Town
- Oct 2022: EEA issues SEIR certificate for MEPA compliance
- Nov 2022: Medway enacts Article 15 and 16
- May 2023: EFSB ruled that BESS is not subject to EFSB jurisdiction; AG approves Article 15 and most of Article 16
- Jun 2023: DPU ruled project as a public service corporation necessary for public convenience and welfare and granted comprehensive zoning exemptions
CEISP

- Commission on Clean Energy Infrastructure Siting and Permitting (CEISP) established by Gov. Healey in Sep 2023
  - MAPC, MMA, and MACC representing municipal perspective
  - Interagency Task Force + Siting Practitioner Advisory Group
- Goal: develop recommendations for regulatory and legislative reform to streamline clean energy siting by March 31
  - State and local permitting reforms
  - Environmental impacts
  - Community engagement and benefit agreements
- Open for public comment until March 15:
CEISP: Progress to-date:

– Reviewing existing permitting pathways
– Examining current bottlenecks and opportunities for streamlining
– Reviewing straw proposals and draft recommendations
CEISP: MAPC Perspective

- Streamlining of local and state approval processes is critical to ensuring MA can meet its climate goals
- Streamlining cannot come at the cost of preserving key principles:
  - Municipalities must retain local jurisdiction and authority over most projects
  - Community engagement must be proactive, extensive, and core to CEI siting process; community benefits agreements are critical parts of good faith engagement
- Recommendations must encourage shared development of CEI—not at the expense of individual communities and EJ populations
- Additional guidance and support will be necessary from state to support community efforts under accelerated review timelines and to engage in state-level processes
- Requirements and/or incentives for expedited/streamlined permitting or targets for CEI siting and zoning may be necessary to enable achievement of state goals
Questions?

Jeremy Koo
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– What are your biggest concerns about CEI siting in your community? What are you hearing from your residents?
– What actions has your community taken (or is considering taking) around CEI siting?
– Where is additional support needed?
– What do you hope to see from the CEISP process?
Challenges with Energy Storage

– New and changing market
– Limited understanding and training available about the technology
  – Municipal staff lack understanding to assess projects
  – Public awareness around benefits and risks of energy storage
  – Some municipalities have tried to pass bylaws significantly restricting or banning energy storage projects
## Permitting and Inspections: Code Compliance

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<tr>
<th>Type</th>
<th>Enforcement Authority</th>
<th>Relevant Code</th>
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<tbody>
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<td>Building</td>
<td>Inspectional Services</td>
<td>Massachusetts State Building Code 780 CMR (10th Edition based on 2021</td>
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<td>International Code Series, will be in place in 2024)</td>
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<td>• Article 705- Interconnected Energy Power Sources</td>
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<td>• Article 706- Energy Storage Systems (ESS) operating at more than 50 volts</td>
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<td>• Article 712- DC Microgrids</td>
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<td>NFPA 1 Fire and Electrical Requirements (2021 Edition)</td>
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<td>• NFPA 1, Fire Code, Chapter 52</td>
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<td>• NFPA 110, Standard for Emergency and Standby Power Systems</td>
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<td>• NFPA 111. Stored Electrical Energy Emergency and Standby Power Systems</td>
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Historic District Commission

- Buildings within historic districts seeking exterior modifications visible from a public way must be reviewed by HDC for appropriateness

- Impacts rooftop PV installations

- Many HDCs have issued solar guidelines
Conservation Commission

– Ensure protection of public & private water supply, groundwater supply, wildlife habitat, wetlands, river resources and flood prevention

– Manage stormwater regulations

– Additional permitting required for proximity to wetland resources (100 ft of wetland resource area, 200 ft of river, stream, or brook)

– Additional requirements under municipal wetland bylaws & ordinances (220 municipalities)
Green Communities

– Over 180 MA municipalities have adopted zoning ordinances for as-of-right siting for solar PV (>250 kW) through Green Communities designation (Criterion 1)
  – Some adopt Solar Overlay Districts

– DOER model as-of-right zoning bylaw useful resource
  – Undergoing updates
  – Could add value by providing additional guidance for storage

– Nearly all communities in MA have adopted some form of expedited permitting for solar (Criterion 2)
  – Expedited process max of 1 year
Municipal Streamlining of Solar Permitting

- Providing a solar permitting checklist helps streamline process through clarity and transparency
- Reduces time and costs for Inspectional Services and solar developer
- Accessory use solar – Expedited permitting and reduce number of inspections
- Commercial permitting will require more extensive building/structural, electrical, and fire though related requirements are based on building and electrical codes, not zoning
Scaling Up Clean Energy through Streamlined Permitting

- Multi-year DOE-funded project with MAPC, New Buildings Institute (NBI), and Southwest Energy Efficiency Project (SWEEP)

- Provides technical assistance to adopt streamlined permitting guidance:
  - Electric Vehicle Guide for One and Two-Family Homes
  - Electric Vehicle Guide for Multi-Family and Office
  - Energy Storage and Solar for Single-Family and Duplex
  - Energy Storage and Solar for Multi-Family and Office

- Support to municipalities to pilot checklists goes until spring 2024, contact AShepard@mapc.org if interested in being involved
Other Efforts

– SolSmart designation and technical assistance

– Governor-appointed Commission on Clean Energy Infrastructure Siting and Permitting (CEISP) to explore opportunities to streamline permitting and siting issues to facilitate accelerated growth

– DOER grant application to DOE’s Renewable Energy Siting through Technical Engagement and Planning (R-STEP) grant program
Case Study: Watertown Solar Ready Zone

- New Section 8.05, and amend Section 9.03(a), for an updated Solar Energy System Assessment

- Require projects of 10,000 s.f. or more or 10 or more residential units to include a solar energy system equivalent to 50% of the roof area of buildings as well as 90% of uncovered area of parking structures

- Provide exemptions for a lack of a solar-zone or for load feasibility

- Section 5.04: Amend/clarify that solar systems are not included in Building Coverage or Impervious Cover
Case Study: Natick Solar Parking Canopies

- “Solar Suburb” with nearly 10 MW installed solar
- One of first municipalities to install solar on municipal buildings (high school, middle school, senior center)
- Solar canopy policy in zoning code
  - Added to definitions of ground mounted solar “A special application of a ground-mounted solar energy system that is installed on top of a parking surface or paved surface that maintains the function of the area beneath the canopy”
  - % Building Cover/impervious surfaces
  - Height
  - Accessory structure setbacks in residential districts apply
  - Allowed where parking is allowed in non-residential districts

Rooftop solar and parking canopy at the Walnut School in Natick, MA. Source: MAPC