Commonwealth of Massachusetts

Commission on Energy Infrastructure
Siting and Permitting Overview

January 11, 2024

Overview

- Commission established by Executive Order 620
- Required to advise the Governor on:
  1. accelerating the responsible deployment of clean energy infrastructure through siting and permitting reform in a manner consistent with applicable legal requirements and the Clean Energy and Climate Plan;
  2. facilitating community input into the siting and permitting of clean energy infrastructure; and
  3. ensuring that the benefits of the clean energy transition are shared equitably among all residents of the Commonwealth
- Recommendations may include suggestions for administrative, regulatory, and legislative changes to existing laws and procedures.
- Recommendations due to Governor by March 31, 2024.
- Work is supported by the Interagency Siting and Permitting Task Force and the Siting Practitioner Advisory Group

Interagency Siting and Permitting Task Force

- Tasked with supporting the work of the Commission
- Comprised of representatives from the following agencies/offices:
  - Executive Office of Energy and Environmental Affairs
    - Department of Public Utilities
    - Energy Facilities Siting Board
    - Department of Environmental Protection
    - Department of Energy Resources
    - Department of Fish and Game
    - Department of Agricultural Resources
    - Department of Conservation and Recreation
    - Office of Coastal Zone Management
    - Massachusetts Environmental Policy Act Office
    - Massachusetts Clean Energy Center
  - Executive Office of Economic Development
  - Executive Office of Housing and Livable Communities
  - Executive Office of Labor and Workforce Development
  - Massachusetts Department of Transportation
  - Executive Office of Public Safety and Security
  - Massachusetts Port Authority
  - Massachusetts Bay Transit Authority
  - Massachusetts Historical Commission
  - Massachusetts Attorney General's Office

Siting Practitioner Advisory Group

- Tasked with providing technical assistance to the Commission as needed, both on its own and as requested by the Commission.
- Comprised of the following individuals:
  - Mary Beth Gentleman (Chair)
  - Ann Berwick
  - Kathleen Brill
  - David Fixler
  - Richard Kanoff
  - Andrew Kaplan
  - Jonathan Klavens
  - David Rosenzweig
  - Greg Sampson
  - Jessica Wall
  - Jolette Westbrook

Background

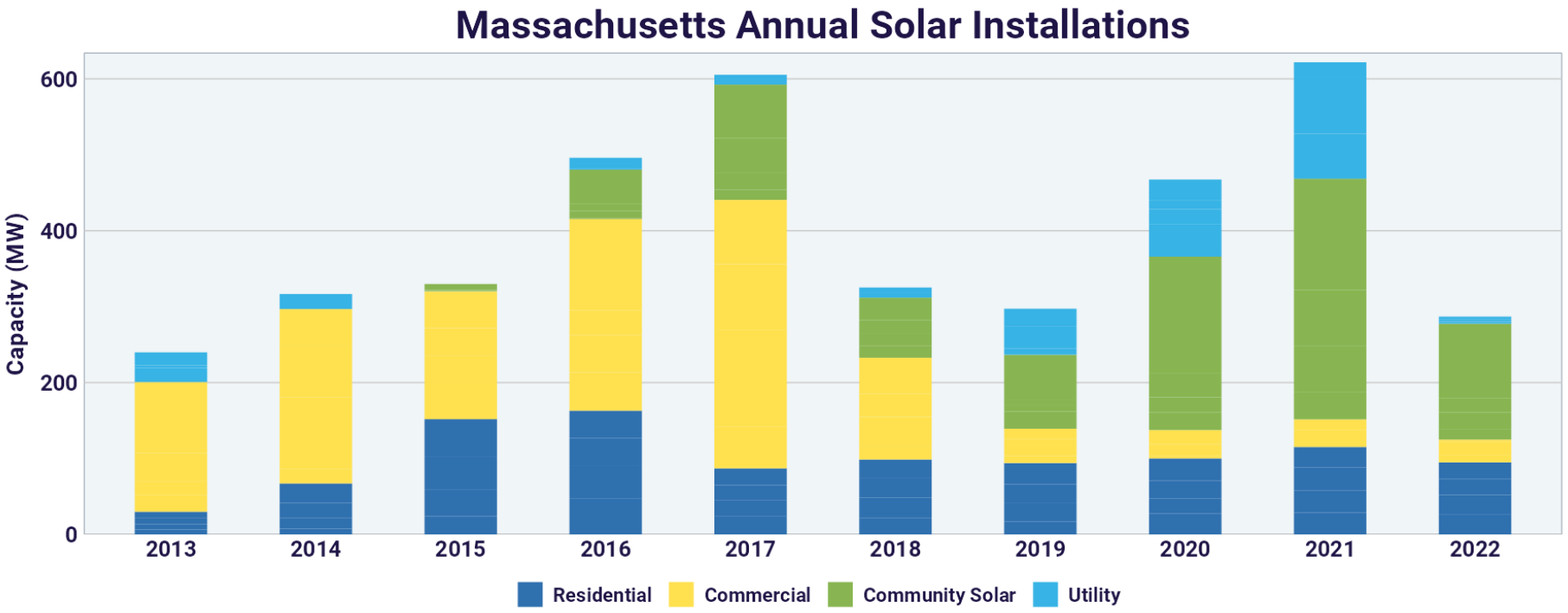
- Clean Energy and Climate Plan for 2025/2030 models that the following new sources of energy generation will be needed by 2030 to meet the power sector GHG emissions sublimits:
  - Construction of NECEC transmission line
  - 3,200 MW of offshore wind
  - Over 8 GW of solar (currently have just over 4 GW)
- By 2035, electric load will likely have grown by as much as 20-30% as compared to today (60 GWh to 75+ GWh) and we will likely need:
  - Approximately 8 GW of offshore wind
  - Approximately 16 GW of solar
- By 2050, we may need as much as:
  - 23 GW of offshore wind
  - 27-34 GW of solar
- Estimates on precisely how much storage is needed are not as clear and are scenario specific, but significantly more is needed.
  - We will also need various types of storage (e.g., short, medium, and multi-day).

Offshore and Onshore Wind

- Offshore wind industry currently faces significant challenges:
  - Supply chain
  - Inflation
  - Workforce
- These hurdles can be overcome, but deployment timelines may be delayed.
- Massachusetts will be hard pressed to reach its 2030 offshore wind deployment goal of 3,200 MW.
- Achieving 2035 targets and beyond will require more than 1 GW of capacity deployed annually from 2030 - 2050.
- Likely to be heavily reliant on floating offshore wind in Gulf of Maine.
- Supply chain development will be critical to success, as well siting of onshore transmission infrastructure to deliver power to load centers.
- Onshore wind is extremely challenging to develop in Massachusetts (no new capacity since 2016).
- Regional onshore wind resources face out of state transmission constraints and siting and permitting challenges.

Solar

- Massachusetts has installed 600 MW of solar in a single year just twice (2017 and 2021).
- Massachusetts is currently far off target for achieving long-term solar installation goals.
- To reach 2030 goals, it will need to deploy an average of over 600 MW per year, which is far above the current pace of installations.
- To reach 2035 goals, it will need to deploy an average of over 1,000 MW per year.
- To reach 2050 goals, it will need to deploy an average of 1,000 – 1,600 MW per year (new installs + replacement of all capacity deployed through 2030).



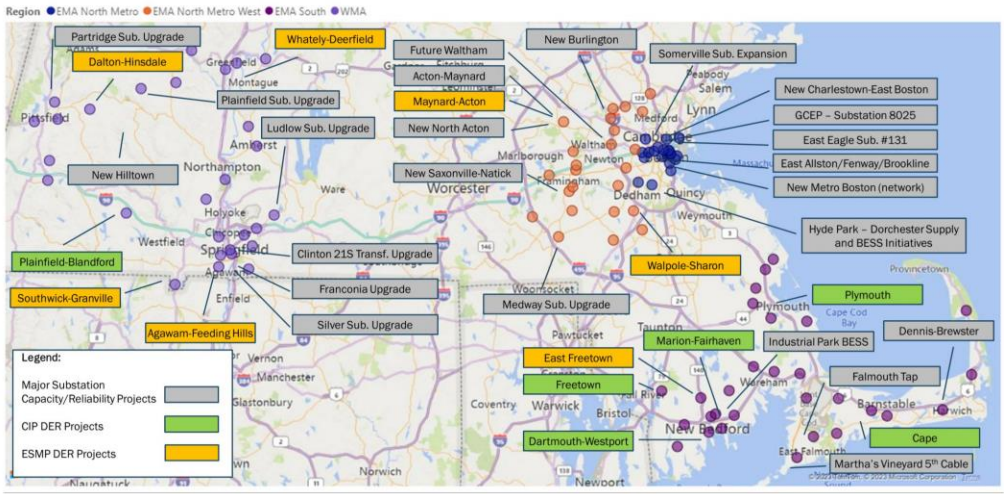
Storage

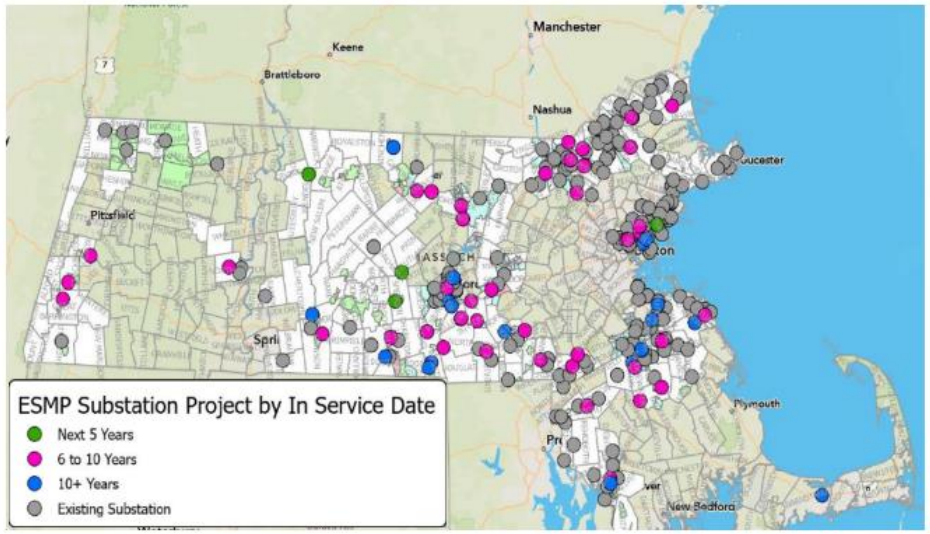
- Moving to a grid that is heavily reliant on intermittent renewables will require a significant amount of energy storage.
- This will require different types of storage (short-term, medium-term, multi-day).
- Exact quantities needed are hard to estimate and are dependent on a lot of factors, but industry faces the following headwinds right now:
  - Unclear value proposition for wholesale and distribution connected resources given current market/rate structures and incentives.
  - Interconnection is a challenge at both the transmission level and distribution level.
  - Siting and permitting uncertainty.

Transmission and Distribution Infrastructure

- Eversource
  - By 2035:
    - 17 new substations
    - 26 upgraded substations
- National Grid
  - By 2035:
    - 28 new substations
    - 17 upgraded substations
    - 17 new distribution feeders
  - 2035-2050:
    - 26+ new substations
    - 44+ upgraded substations
- Significant transmission capacity expansion required as well (e.g., National Grid proposing to rebuild four 69kV circuits in Western MA to 115kV)

10-Year DER Capital Investment Project (CIP) Solutions





Community Input and Equity

- Many communities feel that they often do not have sufficient input into the siting of major energy infrastructure projects.
- Specifically, communities aim to be engaged early in the process of any infrastructure siting proposal and provided the opportunity to shape the impact of a final permitted project.
- Communities are looking for the benefits and burdens to the host community to be clearly articulated.
- Where impacts cannot be avoided, communities are looking for mitigation efforts associated with those impacts.
- The commission will need to find a way to balance these efforts with the need to expedite permitting processes to meet our clean energy and climate targets.