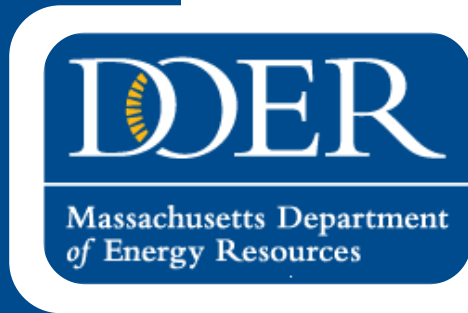


Creating A Clean, Affordable, Equitable and Resilient Energy Future For the Commonwealth



COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENERGY RESOURCES
Elizabeth Mahony, Commissioner

Massachusetts

Planning for a Transitioning Grid

Massachusetts Clean Energy Planning

Achieving emissions goals, while accommodating new load growth due to building and transportation electrification and ensuring an affordable and reliable grid, requires *careful planning and a range of policy tools*

Massachusetts
Clean Energy and
Climate Plan for
2025 and 2030

June 30, 2022

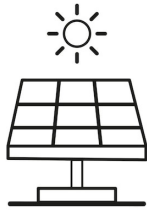


- Distribution system modernization is a key policy for Massachusetts decarbonization
- System planning and grid modernization will be required to maintain a reliable and resilient system as clean energy policies increase the number of DERs interconnected to the grid.
 - Dynamic, bi-directional distribution system to optimize the integration of DERs.
 - Support the growth of EVs, distributed solar, energy storage and electric heating that
- With an increase in electric transportation and buildings, a **low-cost, reliable electricity system** will become even more important for consumers.

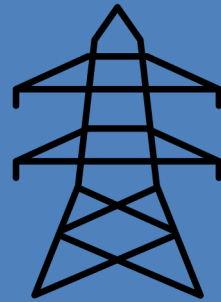
Integrated Planning



Transportation



**Distributed
Energy
Resources**



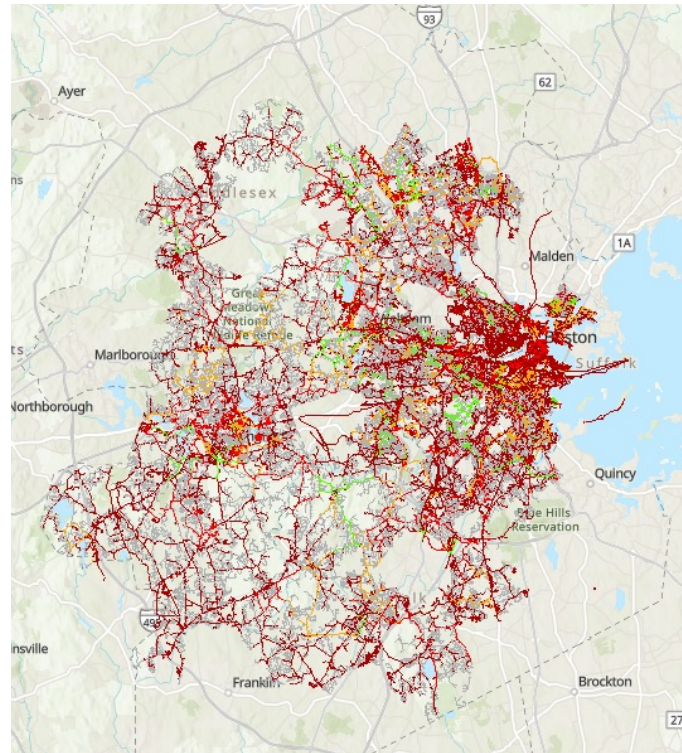
**Building
Load and
Heat Pumps**



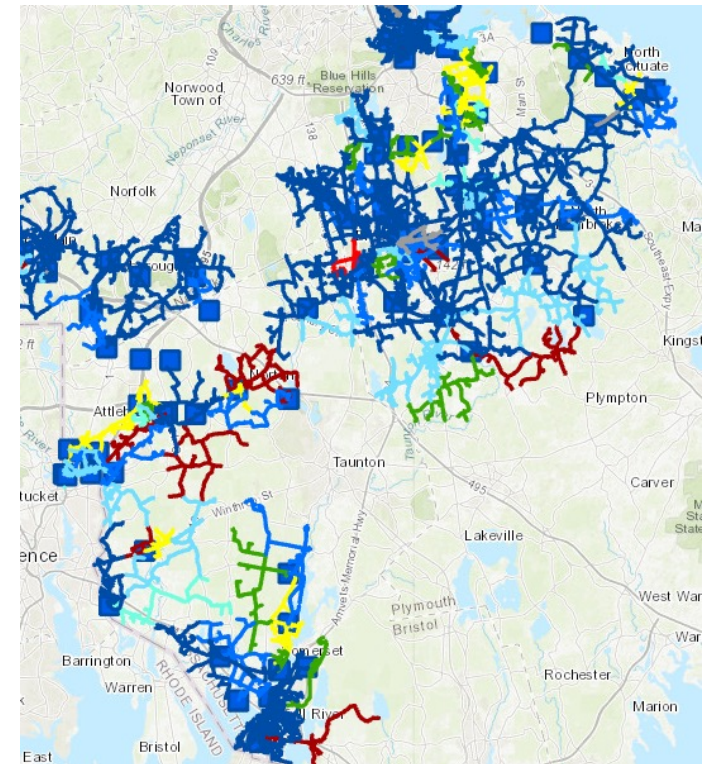
DER Interconnection and Challenges

- Distributed energy resources face interconnection challenges
- Clusters of projects in certain communities turn into group studies

Massachusetts uses a **Capital Investment Projects (CIPs)** to build grid infrastructure for DER groups and electrification



Eversource

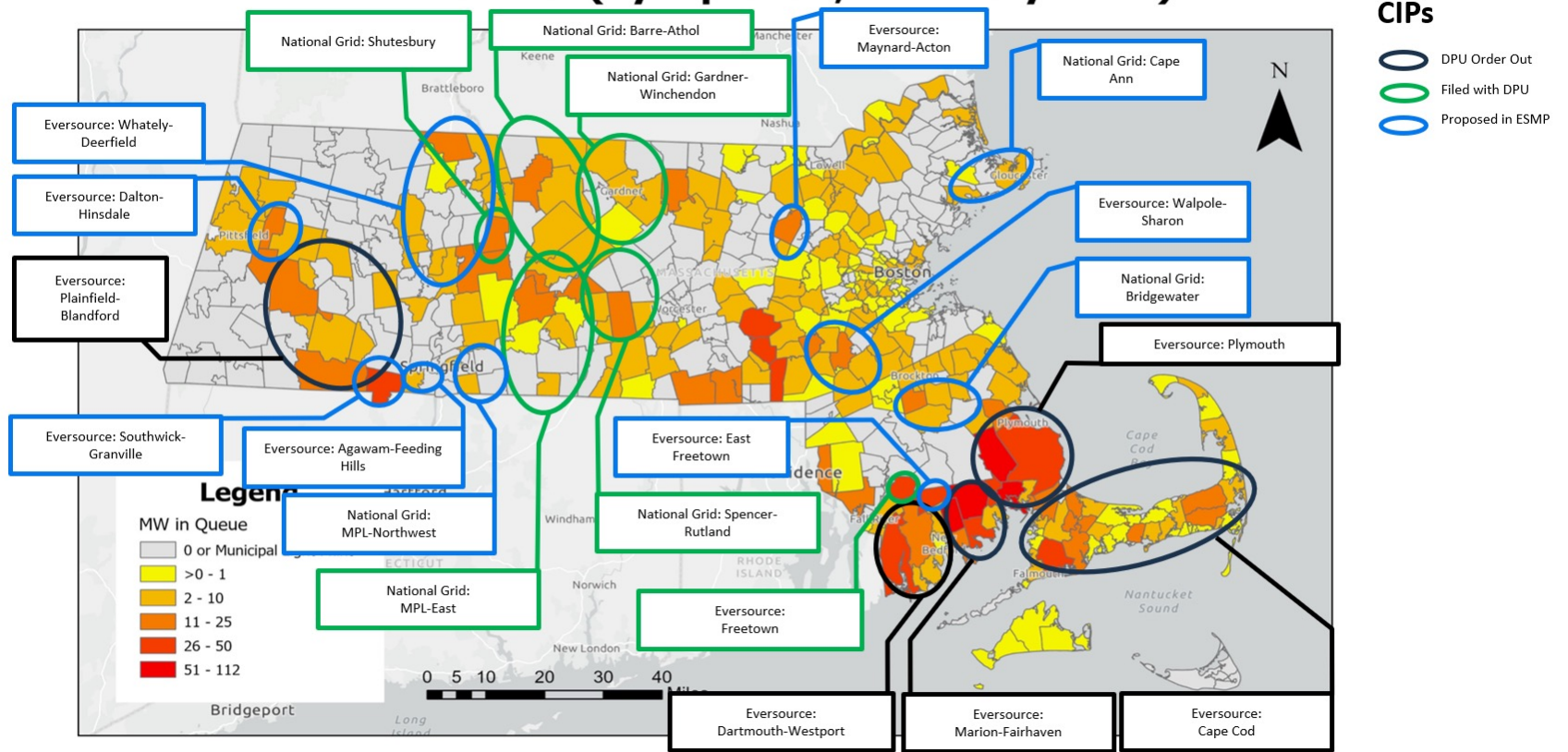


National Grid

Eastern MA Hosting Capacity Maps

Where Are the Proposed CIPs?

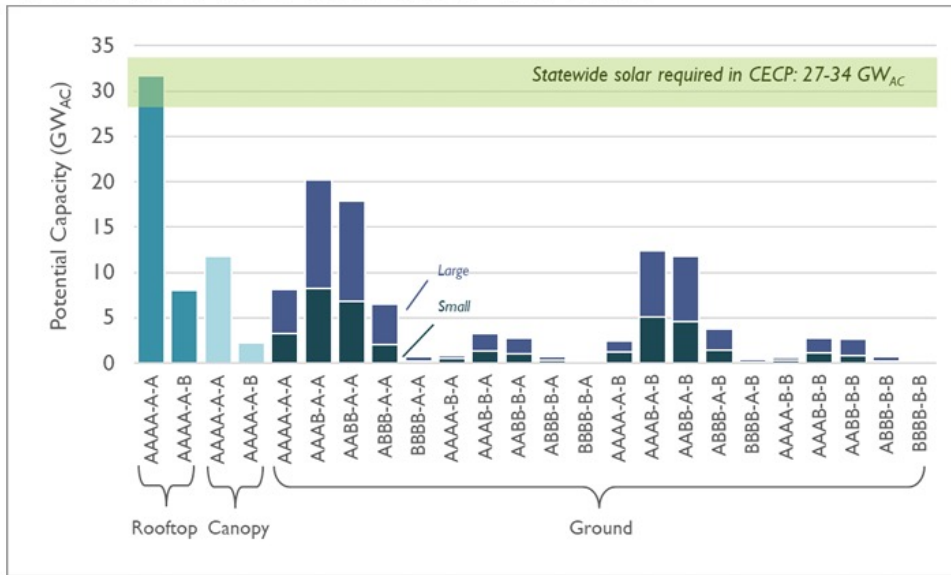
MW of Solar & Storage Projects in the Interconnection Queue in Massachusetts (by Zip Code, as of July 2024)



Source: [MassDOER Aggregated Interconnection Data](#), July 2024

Massachusetts' Solar Potential

Figure 5. Solar potential by combined suitability score, all types, no C grades



Note: This figure does not account for existing solar installations. Existing solar is small compared to the potentials estimated here (about 3 GW).

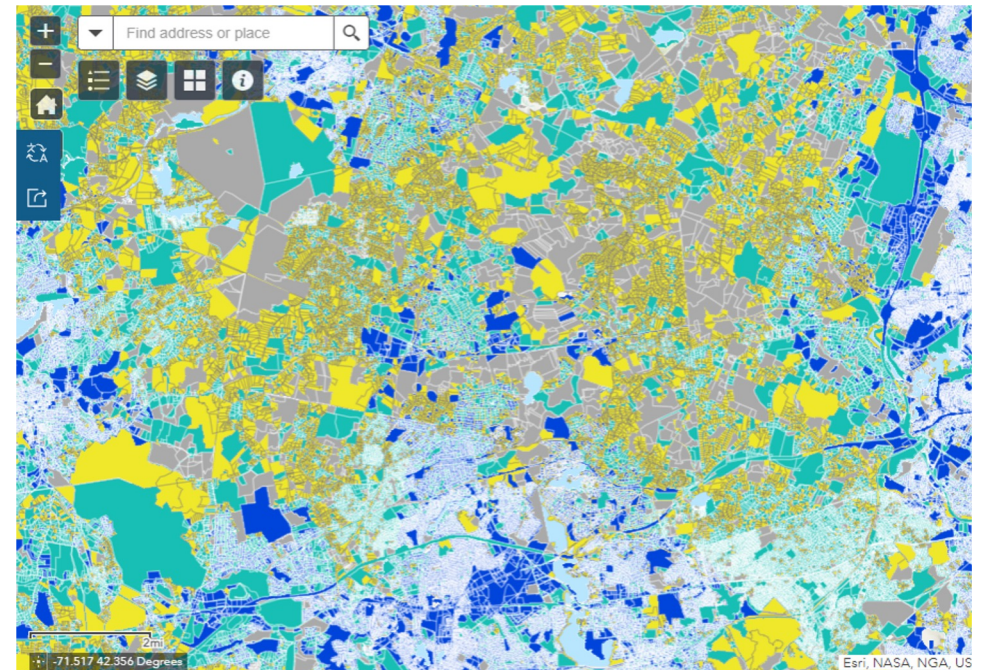


Image from Technical Potential of Solar Study accompanying StoryMap

<https://technicalpotentialofsolar-ma-synapse.hub.arcgis.com/>

<https://www.mass.gov/info-details/technical-potential-of-solar-study>

What are the Electric-Sector Modernization Plans (ESMPs)?

- The state’s investor-owned electric distribution companies (EDCs), Eversource, National Grid, and Unitil, are required by the 2022 Climate Law to submit ESMPs.
- The ESMPs describe the current state of the distribution grid, the utilities’ current and proposed investments in our electric grid, the future of reliability, a forecast of our future power needs, strategies to support renewable energy resources, electric vehicles, and electrified buildings, and more.

■ National Grid
 ■ Eversource Energy
 ■ Municipal Light Plant
 ■ Unitil
 ■ Multiple Providers

Search by city or town...

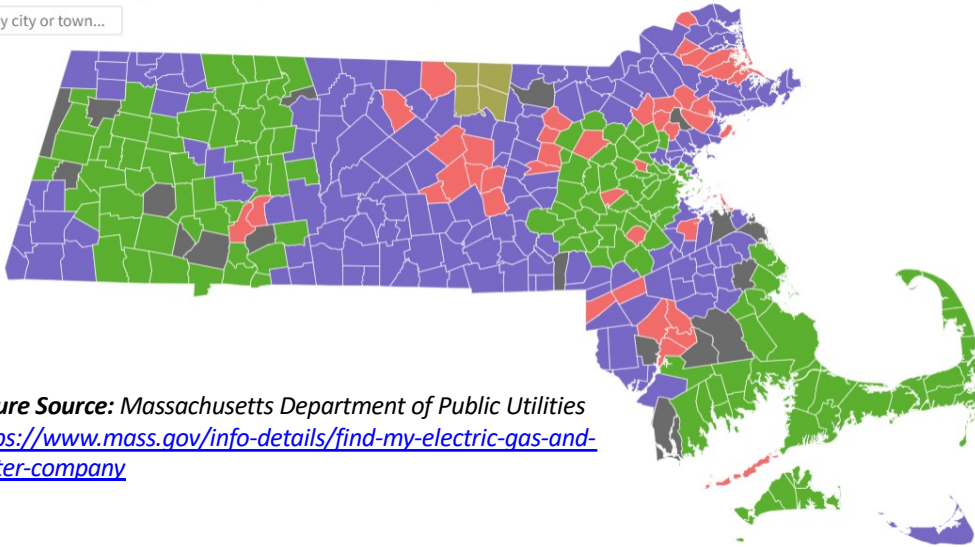


Figure Source: Massachusetts Department of Public Utilities
<https://www.mass.gov/info-details/find-my-electric-gas-and-water-company>

The ESMPs use the same outline, shown below:

ESMP Contents

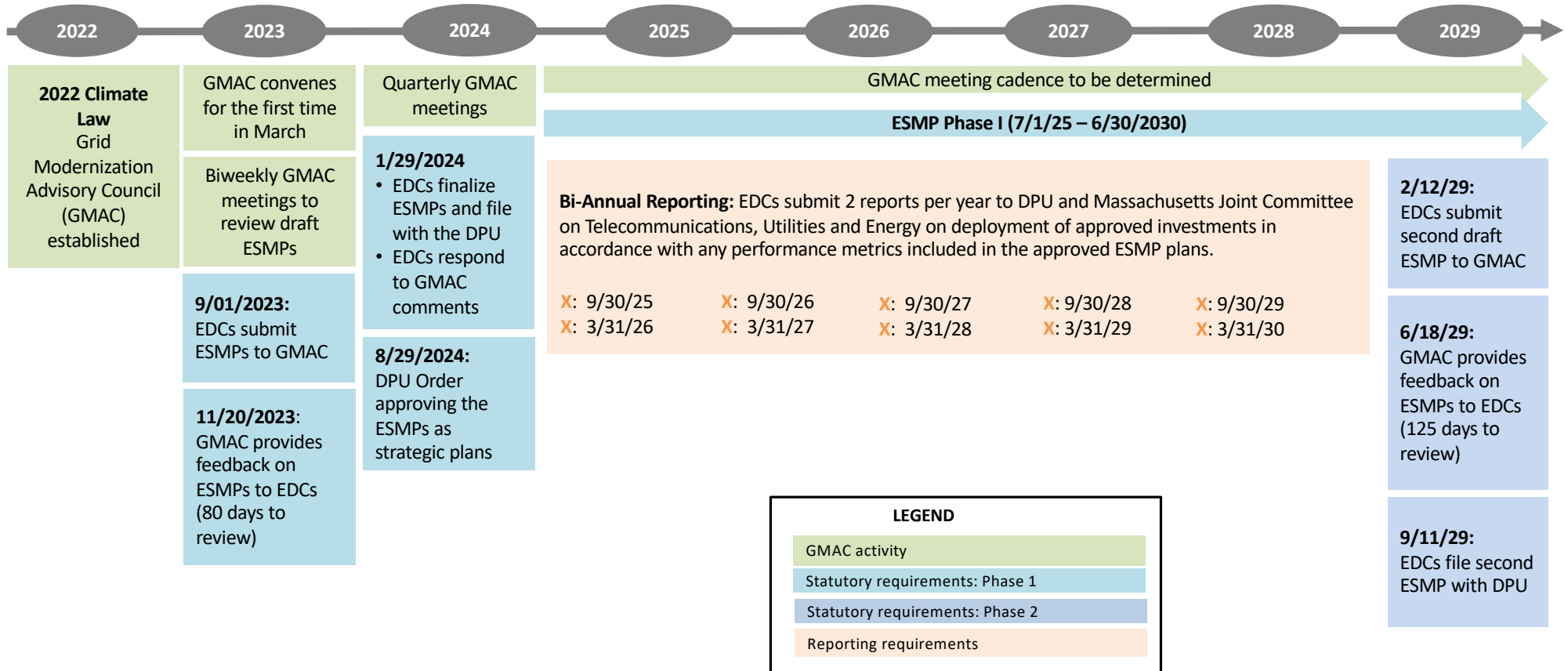
- 1.0 Executive Summary
- 2.0 Compliance with the EDC requirements outlined in the 2022 Climate Act
- 3.0 Stakeholder Engagement
- 4.0 Current State of the Distribution System
- 5.0 5- and 10-Year Electric Demand Forecast
- 6.0 5- and 10-Year Planning Solutions: Building for the Future
- 7.0 5-year Electric Sector Modernization Plan
- 8.0 2035 - 2050 Policy Drivers: Electric Demand Assessment
- 9.0 2035 - 2050 solution set – Building a Decarbonization Future
- 10.0 Reliable and Resilient Distribution System
- 11.0 Integrated Gas-Electric Planning
- 12.0 Workforce, Economic, and Health Benefits
- 13.0 Conclusion
- 14.0 Appendix

What is the Grid Modernization Advisory Council?

The Grid Modernization Advisory Council (GMAC) and Electric Sector Modernization Plan (ESMP) system was set in place by “An Act Driving Clean Energy and Offshore Wind” (the Climate Law) in 2022.

- The law states that the GMAC shall encourage:
 - least-cost investments in the electric distribution system,
 - alternatives to investments or financing investments that will help achieve greenhouse gas emissions limits,
 - transparency and stakeholder engagement in the grid planning process.
- GMAC to review and provide recommendations on electric distribution company *electric-sector modernization plans* to:
 - **maximize customer benefits** and demonstrate **cost-effective investments** in the electric distribution grid,
 - support investments to **enable interconnection** of, and communication with, distributed energy resources and transmission-scale renewable energy resources,
 - facilitate **electrification** of buildings, transportation and other sectors,
 - improve grid **reliability** and **resiliency**, and
 - minimize or mitigate **impacts on ratepayers**.

Electric Sector Modernization Plans & the Grid Modernization Advisory Council



Community Engagement Stakeholder Advisory Group (CESAG)

- **DPU directs the companies to on:**
 1. Developing additional translation and interpretation best practices
 2. Developing policies and practices related to integrating environmental justice principles into their decision-making with respect to the siting of electric distribution system infrastructure projects
 3. Receiving input on actions that could enhance and assist in fully implementing all aspects of the equity framework

Policy Deliberative

CESAG:

EDC and CBO co-led group that will develop a community engagement framework, centered in equity, which can be applied to major clean infrastructure projects related to the clean energy transition before these projects are submitted to the DPU and/or the Energy Facilities Siting Board (EFSB).

- 4-month timeframe
- Professionally facilitated
- **Update:** Facilitator contract being finalized; EDCs planning to begin in Q4 2024.

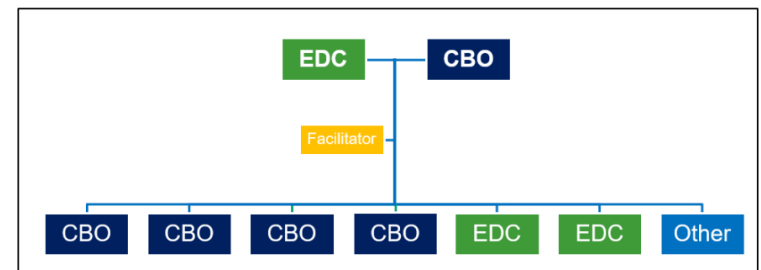


Figure 3-8: CESAG Members Framework