

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENERGY RESOURCES

# Grid Modernization Advisory Council Public Listening Sessions

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October 30, 2023, 6:00 PM – 7:30 PM  
November 1, 2023, 12:00 PM – 1:30 PM

# Agenda

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- Welcome
- Public Comments Logistics
- Overview of the Grid Modernization Advisory Council
- Overview of the Electric-Sector Modernization Plans
- Resources
- Public Comments

# Welcome!

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- The Grid Modernization Advisory Council (GMAC) welcomes your feedback and suggestions.
- Your input will help inform GMAC discussion of recommendations on the electric utilities Electric-Sector Modernization Plans (ESMPs)
- Public comment helps shape the future of the grid in the Commonwealth.

# Logistics for Today

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- All listening sessions are virtual via Zoom.
  - *Session #1: October 30, 2023, 6:00 PM – 7:30 PM*
  - *Session #2: November 1, 2023, 12:00 PM – 1:30 PM*
- Stakeholders who wish to comment were asked to pre-register prior to the commencement of the session.
- Submittal of written public comment via email is also encouraged in order to post comments to the GMAC website.
- After a brief overview of the GMAC and ESMP process, each person providing public comment will be given 3 minutes to speak.
- Once everyone who has pre-registered has provided comment, others may speak, as time allows. Please use the “raise hand” function in Zoom to provide a public comment.
- These slides will be available on the GMAC website: <https://bit.ly/MA-GMAC>

# 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**.

# Who is the GMAC?

## Government members

|   |                  |
|---|------------------|
| <b>CHAIR:</b> DOER Commissioner (or designee) | Elizabeth Mahony |
| Attorney General (or designee)                | Kelly Caiazzo    |
| MassCEC Executive Director (or designee)      | Sarah Cullinan   |

## Non-voting utility members

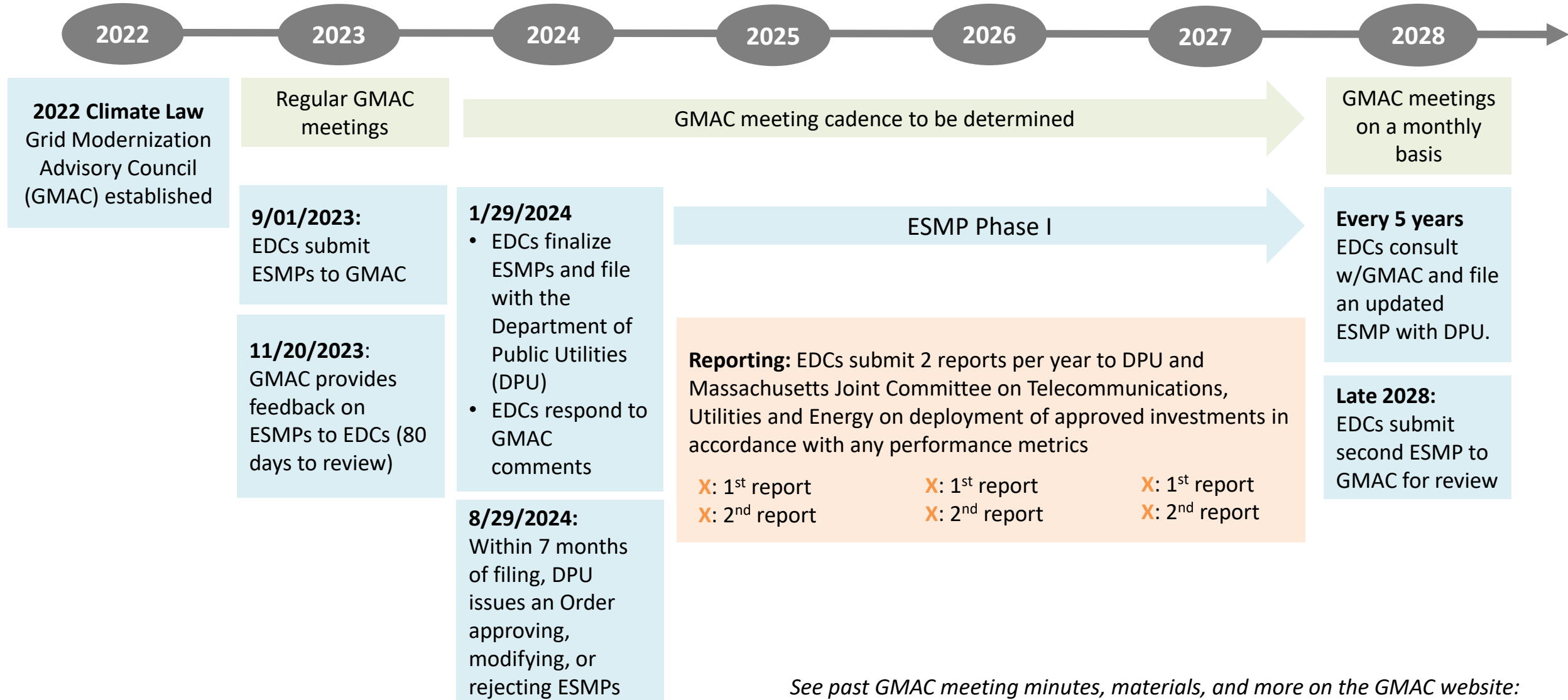
|               |                     |
|---------------|---------------------|
| Eversource    | Digaunto Chatterjee |
| National Grid | Carol Sedewitz      |
| Unitil        | Kevin Sprague       |

## Appointed voting members (5-year terms, may be reappointed)

|   |   |
|---|---|
| Middle/low-income residential customers | Larry Chretien, Green Energy Consumers Alliance                           |
| Low-Income weatherization               | Marybeth Campbell, Worcester Community Action Council                     |
| Environmental advocacy                  | Kyle Murray, Acadia Center  |
| Environmental justice                   | Kathryn Wright, Barr Foundation   |
| Transmission scale renewables           | Alex Worsley, Enel North America  |
| Distributed generation renewables       | Kathryn Cox-Arslan, New Leaf  |
| Energy storage industry                 | Sarah Bresolin Silver, Engie  |
| Electric vehicle industry               | Amy McGuire, Highland Fleets  |
| Building electrification industry       | JS Rancourt, DXS – Direct Expansion Solutions, Daikin                     |
| Municipal/regional                      | Jeremy Koo (designee for Julie Curti), Metropolitan Area Planning Council |
| Engineering expertise                   | Andy Sun, Massachusetts Institute of Technology                           |
| Large commercial/industrial customers   | Jonathan Stout, Dana Farber Cancer Institute                              |

# GMAC & ESMP Process (Through 5-years)

GMAC activity  
Statutory requirements  
Reporting requirements



See past GMAC meeting minutes, materials, and more on the GMAC website:  
<https://www.mass.gov/info-details/grid-modernization-advisory-council-gmac>

# GMAC Review Timeline

The 2022 Climate Law gives the GMAC 80 days to review and provide recommendations on the ESMPs.

## September

| M  | T  | W  | Th | F                  |
|----|----|----|----|--------------------|
|    |    |    |    | 1<br>Receive ESMPs |
| 4  | 5  | 6  | 7  | 8                  |
| 11 | 12 | 13 | 14 | 15                 |
| 18 | 19 | 20 | 21 | 22                 |
| 25 | 26 | 27 | 28 | 29<br>X            |

## October

| M       | T       | W  | Th | F       |
|---------|---------|----|----|---------|
| 2<br>●  | 3       | 4  | 5  | 6       |
| 9<br>■  | 10<br>● | 11 | 12 | 13<br>● |
| 16      | 17      | 18 | 19 | 20      |
| 23<br>● | 24      | 25 | 26 | 27<br>X |

## November

| M                      | T       | W       | Th      | F       |
|------------------------|---------|---------|---------|---------|
| 30<br>●                | 31      | 1<br>●  | 2       | 3<br>●  |
| 6                      | 7       | 8       | 9       | 10<br>■ |
| 13                     | 14      | 15<br>● | 16      | 17<br>X |
| 20<br>Feedback to EDCs | 21      | 22      | 23<br>■ | 24      |
| 27                     | 28<br>● | 29      | 30      |         |

- GMAC Meeting
- State Holiday
- X Executive Committee Meeting
- EDC Technical Session
- Public Listening Session
- Joint GMAC & Clean Energy Transmission Working Group Meeting
- Equity Working Group Meeting

## GMAC Meeting Discussion Plan

- **9/14:** Stakeholder Engagement, Current State, 5–10-year forecast (Chapters 3, 4, 5)
- **9/28:** 5–10-year solutions, Reliable & Resilient, Workforce, Economic, & Health Benefits (Chapters 6, 10, 12)
- **10/12:** 2035-2050 Drivers and Solution, Gas-Electric Planning (Chapters 8, 9, 11)
- **10/26:** Executive Summary, Climate Act Compliance, 5-year ESMP, Conclusion (Chapters 1, 2, 7, 13)
- **11/9:** Discuss draft recommendations
- **11/16:** Finalize recommendations

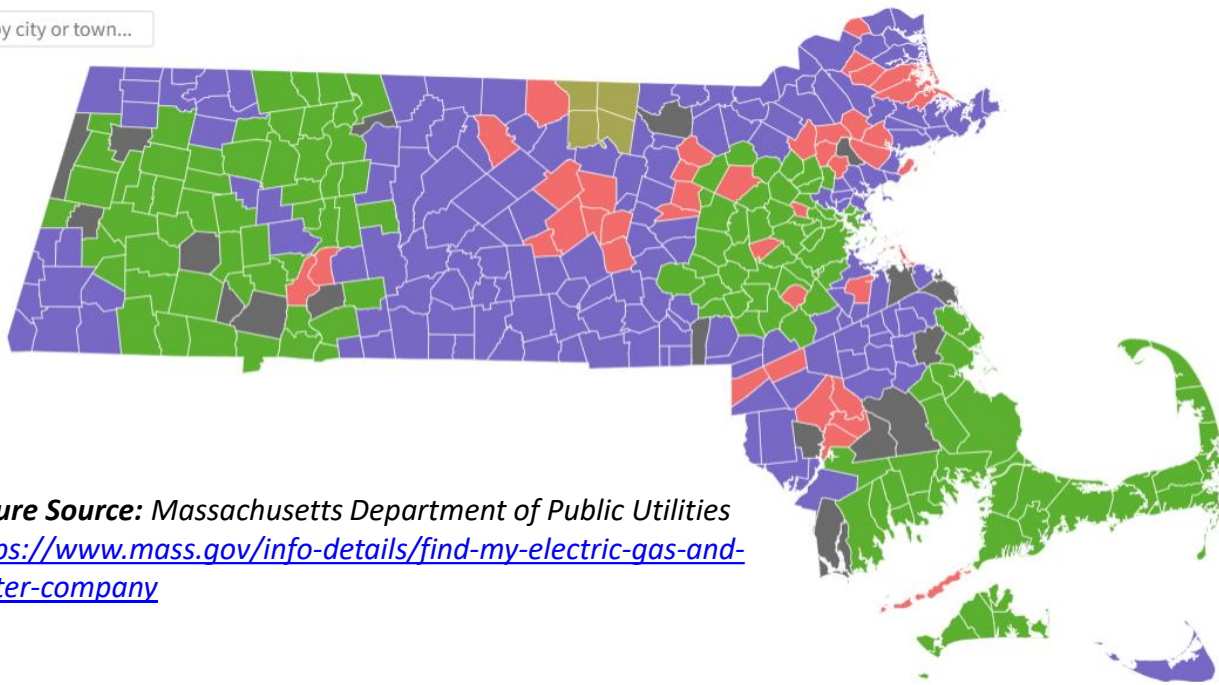


# What are the Electric-Sector Modernization Plans (ESMPs)?

- 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...



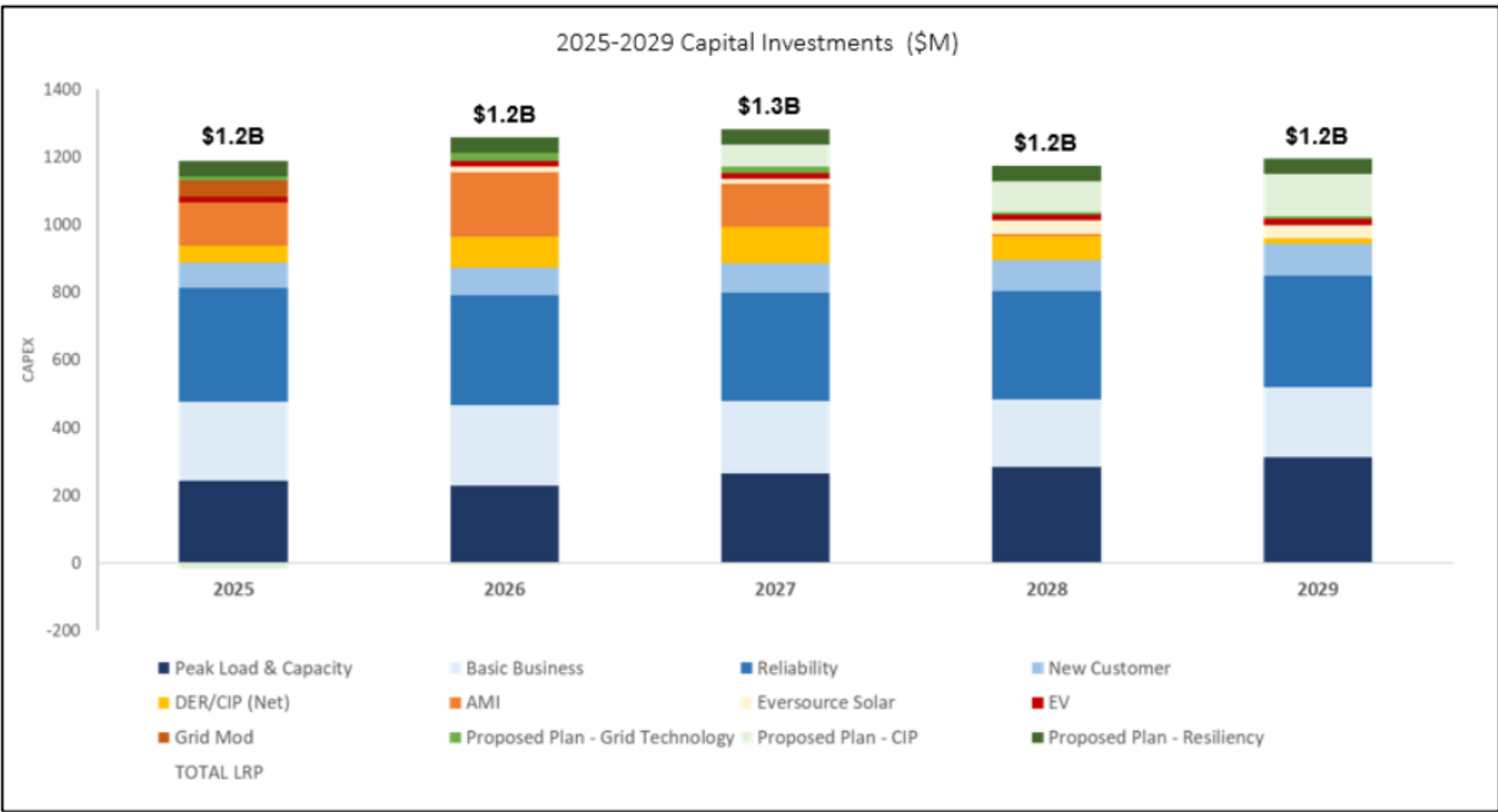
**Figure Source:** Massachusetts Department of Public Utilities  
<https://www.mass.gov/info-details/find-my-electric-gas-and-water-company>

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

# Summary of 5-Year Investment: Eversource



**Figure 182: 2025-2029 Capital Investments (\$M)**

Source: Eversource ESMP Chapter 7, pg. 378

**For the 5-year period from 2025-2029:**

New proposed capital investment for the ESMP include:

- **Green** = ~\$0.6 billion for grid modernization, CIPs\*, and resiliency.

Other approved, pending, and proposed investments\*\* include:

- **Blue** = ~\$4.5 billion in capacity and reliability investments paid for by base distribution rates
- **Yellow, orange, red, brown** = ~\$1 billion clean energy enablement investments (AMI, EVs, CIPs, grid modernization\*) paid for by dedicated mechanisms

\*AMI = Advanced Metering Infrastructure, EVs = Electric vehicles; CIPs = Capital investment projects from the Provisional System Program

\*\*Investments provided in the ESMPs use the best available information as of 9/1/23 and incorporate investments currently pending DPU approval such as the "Eversource Solar" item and 5 of the 6 CIP areas that are included in the "DER/CIP (Net)" item.

# Summary of 10-year Projects: Eversource

Over the next **10 years**, Eversource proposes to build **17** new substations, and upgrade **26** existing substations

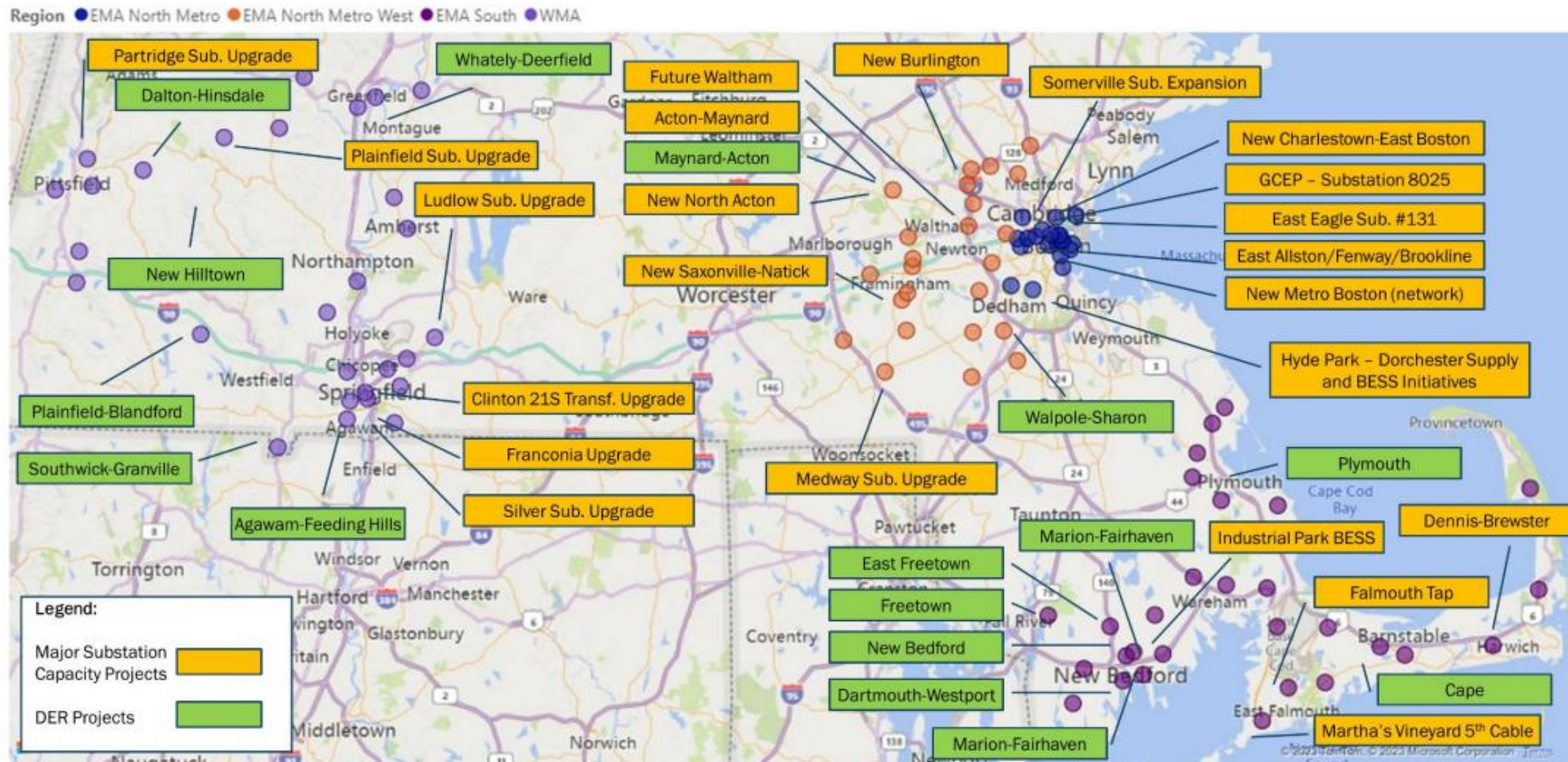


Figure 145: Location of Proposed and Approved Substation Upgrade Projects and CIPs in the Ten-Year Solution Plan

\*Regional maps in greater detail are available in Chapter 6 of Eversource's ESMP

Source: Eversource ESMP Chapter 6, pg. 262

# Summary of 5-Year Investments: National Grid

## For the 5-year period from 2025-2029:

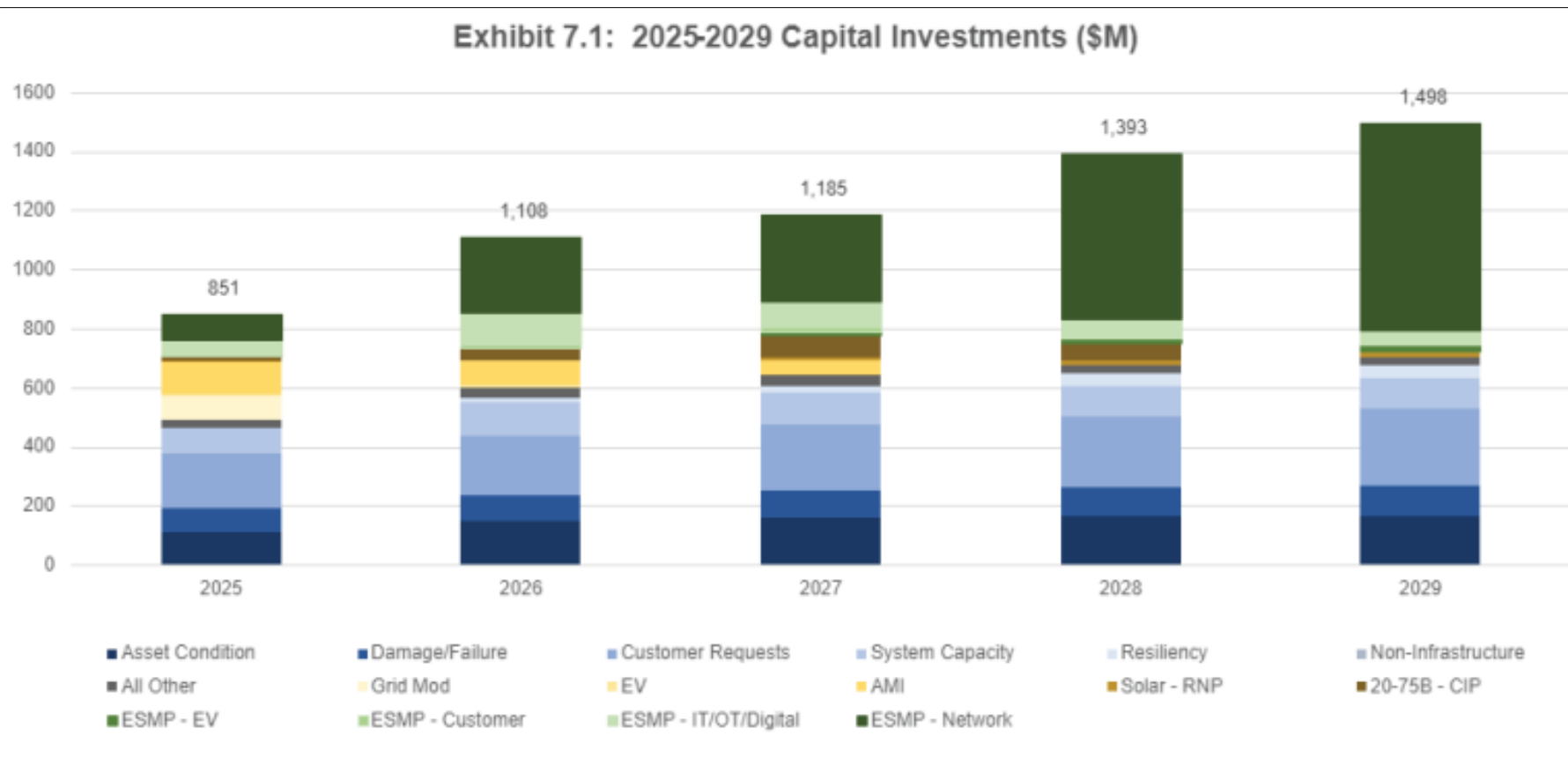
New proposed capital investment for the ESMP include:

- **Green** = ~\$2.3 billion for network, platform, EV\*, and customer investments

Other approved, pending, and proposed investments\*\* include:

- **Blue** = ~\$3.1 billion in base investments for electric operations
- **Yellow** and **brown** = ~\$0.6 billion in active regulatory investments (AMI, EVs, CIPs, grid modernization\*) paid for by dedicated mechanisms

Exhibit 7.1: 2025-2029 Capital Investments (\$M)



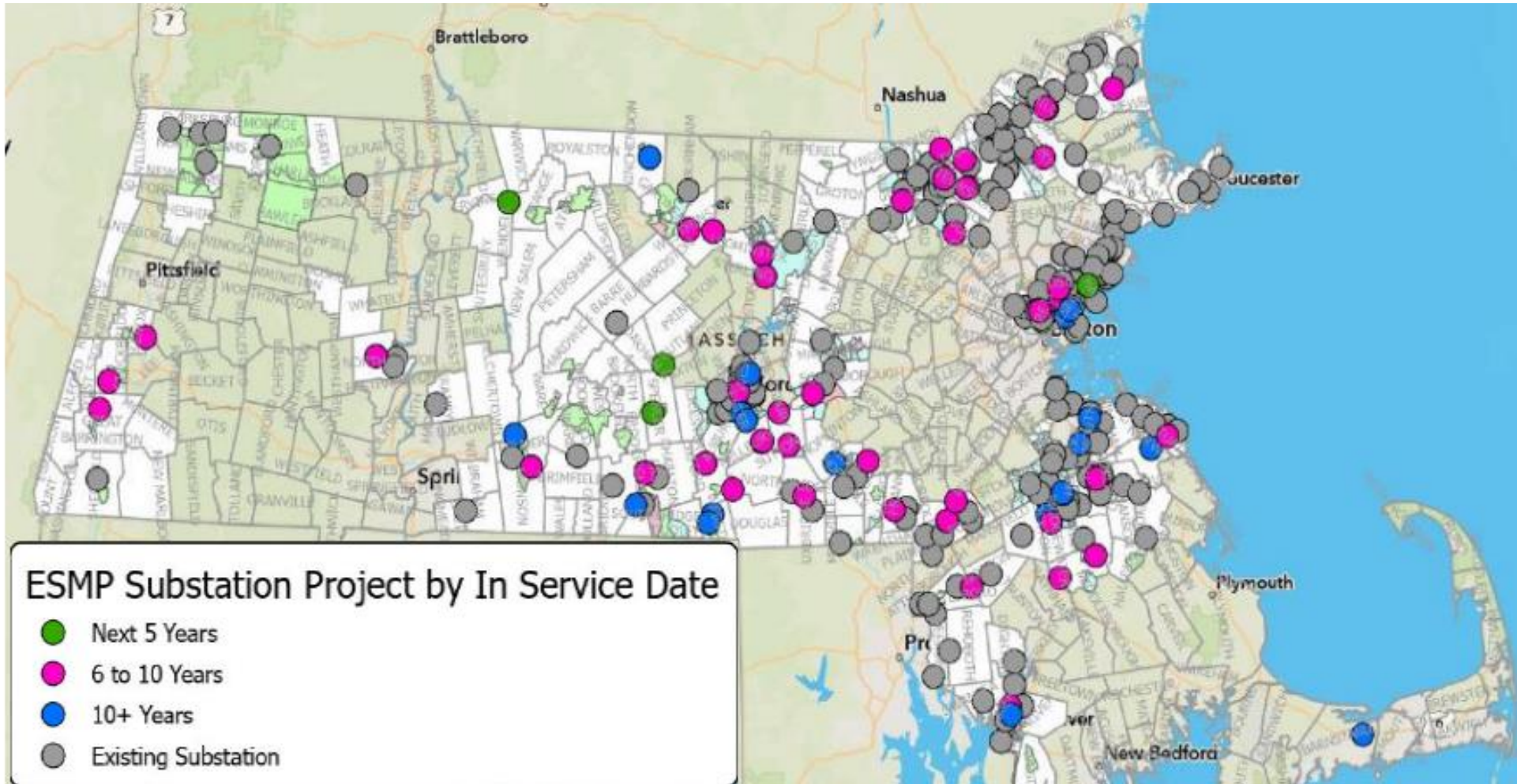
Source: National Grid ESMP Chapter 7, pg. 310

\*AMI = Advanced Metering Infrastructure, EVs = electric vehicles; CIPs = Capital investment projects from the Provisional System Program

\*\*Investments provided by National Grid use the best available information as of 9/1/23 on rate case investments that are still under development, assumes continuation of EE programs, the progression of pending capital investment plans (CIPs), and future implementation of the Resilient Neighborhoods program

# Summary of 10-year Projects: National Grid

Over the next **10 years**, National Grid proposes to build **28** new substations and upgrade **17** existing substations



Source: National Grid Presentation to the Joint GMAC-CETWG meeting on 10/13. Slide 8. [Link](#).

Regional maps in greater detail are available in Chapter 6 of National Grid's ESMP

# Summary of 5-Year Investments: Unitil

## Existing/Approved + Proposed Capital Spend 2025-2029

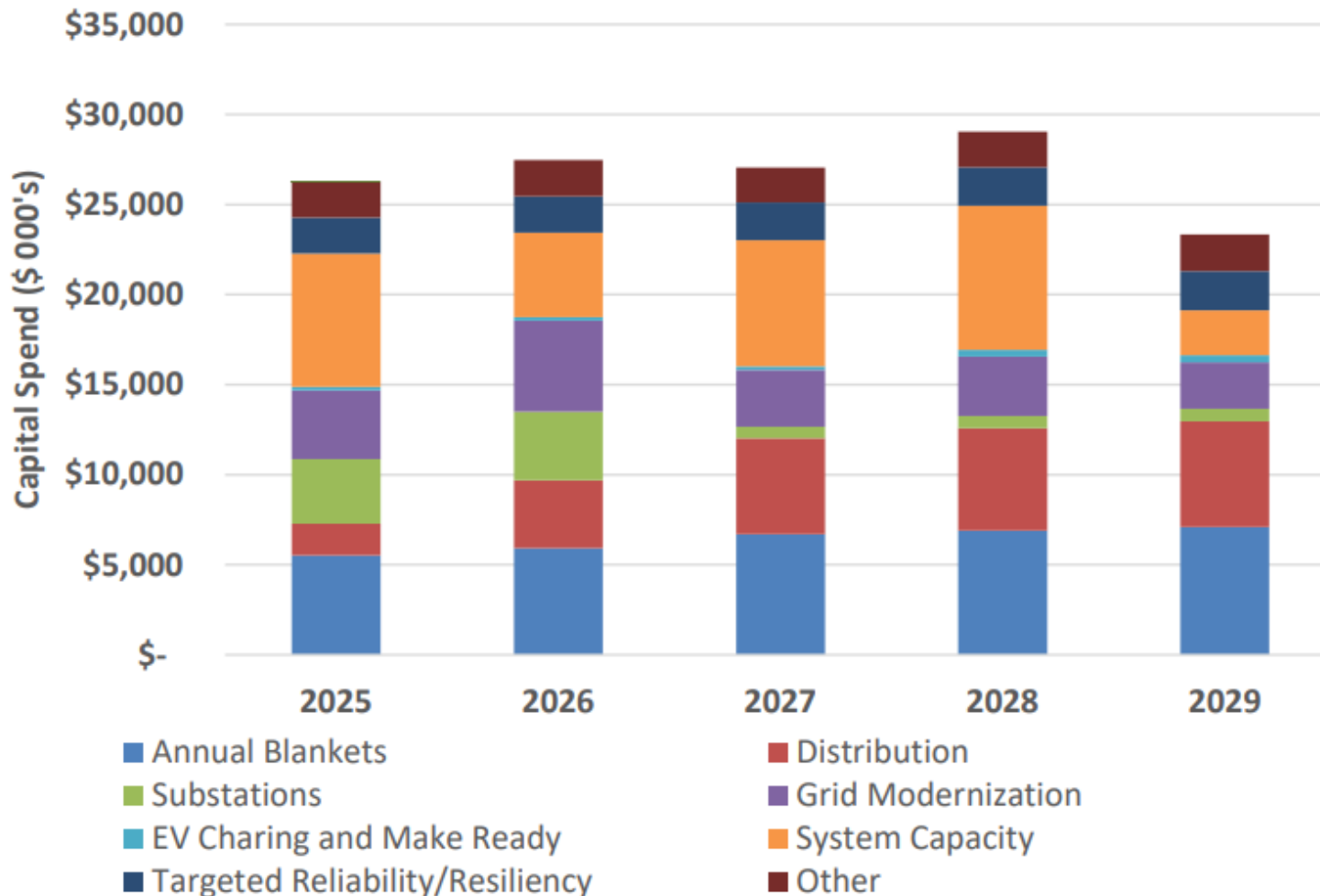


Figure Source: Unitil ESMP Ch. 7, pg. 103

## For the 5-year period from 2025-2029:

New proposed capital investment for the ESMP include:

- **~\$50 million** for grid modernization, capacity projects, electric vehicles, and reliability/resilience.

Already approved investments include:

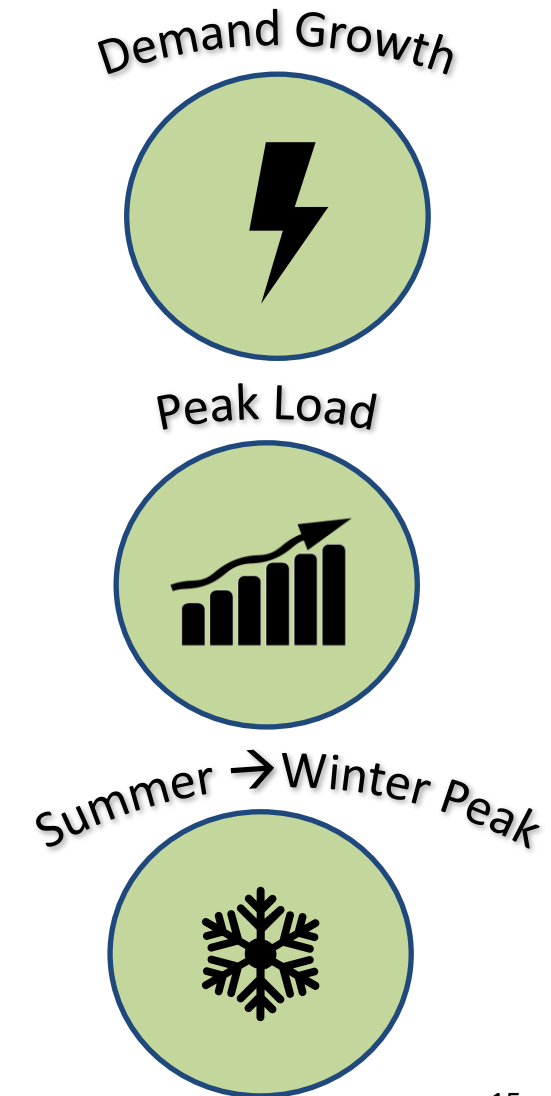
- = **~\$83.5 million** for existing capital spending on annual blankets, distribution, substations, reliability/resiliency, grid modernization, and EVs.\*

\*See page 103-107 of Unitil's ESMP for more information on these spending areas

# Electric Demand Forecasts

- Each ESMP includes a 5-year and 10-year forecasts for the EDC’s territory, as well as a demand assessment through 2050.
- Some take-aways from the forecasts include:

| EDC   | Eversource   | National Grid                                     | Unitil  |
|---|--|---|---|
| Estimated electric demand growth from 2025-2034     | 16%  | 21%   | 13%   |
| Drivers of peak load growth                         | Economic development (new buildings or existing site re-development) | Beneficial electrification from electric vehicles | Both building electrification and baseload growth |
| Shift from summer to winter peaking electric system | 2035   | 2036  | 2034  |
| Sources   | Eversource ESMP pages 187-188  | National Grid ESMP pages 196, 200, 325            | Unitil ESMP pages 62, 134                         |



# Jointly Proposed Working Groups & Studies

The EDCs have coordinated the following joint proposals across their ESMPs.

| Working Group   | Description  | Utilities Engaged                     |
|---|--|---------------------------------------|
| Community Engagement Stakeholder Advisory Group (CESAG) | A new advisory group to develop a community engagement framework that can be applied to the major infrastructure projects.   | Eversource, National Grid, and Unitil |
| Joint Utility Planning Working Group                    | A new integrated gas-electric working group between Local Gas Companies (LDCs) and Electric Distribution Companies (EDCs). The ultimate objective would be to enable development of coordinated EDC-LDC long-range capital plan. | Eversource and National Grid          |

| Study/Fund Name                      | Description  | Utilities Engaged                     |
|--------------------------------------|--|---------------------------------------|
| Grid Service Study                   | Proposed study to establish levels of compensation for distributed energy resources (DER) that provide locational grid services.   | Eversource, National Grid, and Unitil |
| Grid Service Compensation Fund       | A fund for compensating dispatchable DER and flexible loads that participate in a program developed through the Grid Service Study allowing utility dispatch of DER for grid services. | Eversource, National Grid, and Unitil |
| Equitable Transactional Energy Study | Building upon learnings from the Grid Service Study, proposed study to develop recommendations for a more dynamic locational value compensation framework.                             | Eversource, National Grid, and Unitil |



# Upcoming EDC Stakeholder Workshops and Technical Sessions

- Public comment and feedback is welcomed.
  - The EDCs invite you to listen in to their upcoming stakeholder workshops, to learn more about their ESMPs, the transition to clean energy, and hear firsthand from a broad range of stakeholders representing organizations and customers from across the state.
1. **Wednesday 11/15 at 9:00 AM – 1:00 PM.** Registration link: <https://us02web.zoom.us/j/88383523207>
  2. **Tuesday 11/28 at 1:00 PM – 5:00 PM.** Registration link: <https://us02web.zoom.us/j/85094834566>

## Logistics

- Sessions will be recorded and posted to company webpages and linked to the GMAC webpage
- Members of the public or stakeholders who attend or watch the workshops will be able to provide written feedback to EDCs until 12/04/23.
- All recommendations (from workshop participants as well as members of the public, or additional stakeholders) will be tracked and a formalized feedback loop will be developed for increased transparency

## Resources

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- Draft ESMPs and GMAC meeting materials, including agendas and meeting minutes, can be accessed on the GMAC website:
  - <https://bit.ly/MA-GMAC>
- Written public comment can be submitted any time to:
  - [MA-GMAC@mass.gov](mailto:MA-GMAC@mass.gov)
- These slides will be available on the GMAC website.

## Public Comment

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- Each person providing public comment will be given 3 minutes to speak.
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