Energy Transformation Advisory Board: Inaugural Quarterly Meeting

September 30, 2024

Office of Energy Transformation and Advisory Board

- Established May 1, 2024, this first-in-the-nation Office of Energy Transformation (OET) is charged with:
  - Enabling the hands-on execution of the clean energy transition, including:
    - gas-to-electric transition coordination,
    - electric grid readiness, and
    - a just and equitable transition for workers, businesses, and communities.
  - Establishing an Energy Transformation Advisory Board ("ETAB" or "Advisory Board") to accelerate cooperation, understanding, and action among all stakeholders to transform the energy ecosystem.

Welcome and Introductions

Secretary Rebecca Tepper
Executive Office of Energy and Environmental Affairs

Executive Director Melissa Lavinson
Office of Energy Transformation

Meeting Facilitator

Assistant Secretary of Energy Josh Ryor
Executive Office of Energy and Environmental Affairs

Agenda

1. Welcome, Introductions, Meeting and Facilitation Policy Overview (15 min)

2. Review Charters (10 min)

3. Work Group and Deliberation Process and Resourcing (15 min)

4. Remarks from Lieutenant Governor Kim Driscoll (5 min)

5. Overview of Focus Area Work Group (FAWG) Workplans (100 min, including break)
   - Policy Overview
   - Transitioning Away from the Everett Marine Terminal LNG Facility
   - Decarbonizing the Peak
   - Financing the Transition

6. Wrap Up and Next Steps (10 min)

Meeting Objectives: Ensure awareness of and alignment with 1) Advisory Board and FAWG charters, responsibilities, ways of working, and process for developing recommendations; and 2) FAWG activations and workplans.

Review Ground Rules and Remote Participation – Inform/Decide

- **Facilitation Policy Review**
  - Ground Rules
  - Remote Participation

Please see attachments for formal charters, and ground rule and remote participation policies. Information included in the deck is illustrative and for discussion-facilitation purposes. Advisory Board Members will be voting on elements of the attachments.

Facilitation – Ground Rules and Remote Participation

Ground Rules (Attachment B)

- Assume positive intent.
- Engage in constructive dialogue and actively seek agreement.
- Stay on topic and within time (3 min or less).
- Be respectful and forthright.
- Speak one at a time, when called on by the Chair or designee.
- Raise concerns with the Chair or designee, who will act accordingly.
- Be able to substantiate assertions or claims in support of comments and positions.
- Provide any additional written materials to share with the Advisory Board to the Chair prior to a meeting and OET will circulate.

Remote Participation (Attachment C)

- Identify yourself and affiliation prior to any comments.
- Refrain from side conversations in the room out of respect for remote participants.

OET will provide all meeting materials and agendas at least seven days in advance of meetings. Meetings will have a virtual option. Concurrent translation services will be made available at the request of a member.

Vote

Vote

- Energy Transformation Advisory Board Ground Rules (Attachment B).
- Energy Transformation Advisory Board Remote Participation Policy (Attachment C).

Review Charters and Structures – Inform

- **Advisory Board and FAWGs**
  - Mission and Structure
  - Governance, Responsibilities, and Expectations
  - Ground Rules

Please see attachments for formal charters, and ground rule and remote participation policies. Information included in the deck is illustrative and for discussion-facilitation purposes. Advisory Board Members will be voting on elements of the attachments.

Mission and Structure

Energy Transformation Advisory Board

To provide guidance and recommendations on strategic direction to the OET and focus area work groups to execute the energy transition, including gas-to-electric transition coordination, electric grid readiness, and the just and equitable transition for workers, business, and communities.

Transitioning Away from EMT	Decarbonizing the Peak	Financing the Transition
To develop a coordinated strategy to reduce and ultimately eliminate the local gas distribution companies' (LDCs') reliance on the Everett Marine Terminal (EMT) Liquified Natural Gas (LNG) facility aligned with DPU Order 20-80 and the state's climate and clean energy mandates, including those established in the *Global Warming Solutions Act*.	To demonstrate pathways to reduce reliance on and expeditiously eliminate fossil fuels from peaking power plants and combined heat and power facilities (CHP) and deploy alternative demand and supply side options to meet peak load needs in the Commonwealth, in alignment with the electric sector sublimits and clean energy goals established in the *2050 Clean Energy and Climate Plan*.	To identify alternative mechanisms for financing/funding electricity distribution system infrastructure upgrades necessary to achieve the Commonwealth's clean energy and climate mandates that minimizes impacts on consumers' electricity bills, while providing an affordable, sustainable, and timely source of revenue to support investments.

Governance, Responsibilities, and Expectations

Advisory Board

Members approved by EEA Secretary and Governor's office.

Members are senior leaders in their organizations.

Members will serve at least one 2-year term.

Members will meet quarterly.

Members will seek consensus; where consensus is not possible, majority vote and recorded dissent.

Members can volunteer and serve as "Executive Advisors" to and/or participate in the FAWGs.

Meetings open to public for viewing/listening, with meeting minutes and materials posted to the OET website.

One meeting per year will provide opportunity for direct public feedback.

FAWGs

Participation is open to all stakeholders, with membership shared with and affirmed by Advisory Board.

Members are subject matter experts/have a command of the subject matter with a level of decision-making authority, if participating on behalf of an organization.

FAWGs will meet at least bi-monthly, or more often depending on need.

FAWGs will conduct work via individual workstreams, with workstreams meeting as necessary.

FAWG members can self-select workstream participation.

Workstream teams develop workplans and milestones and provide progress updates at full FAWG meetings.

Workstream and full FAWG meetings are Chatham House Rules.

Members will seek consensus, where consensus is not possible, options will be presented to the Advisory Board with stakeholder positions noted.

All final recommendations and materials of the FAWGs will be provided to the Advisory Board and made public.

Questions

Discussion

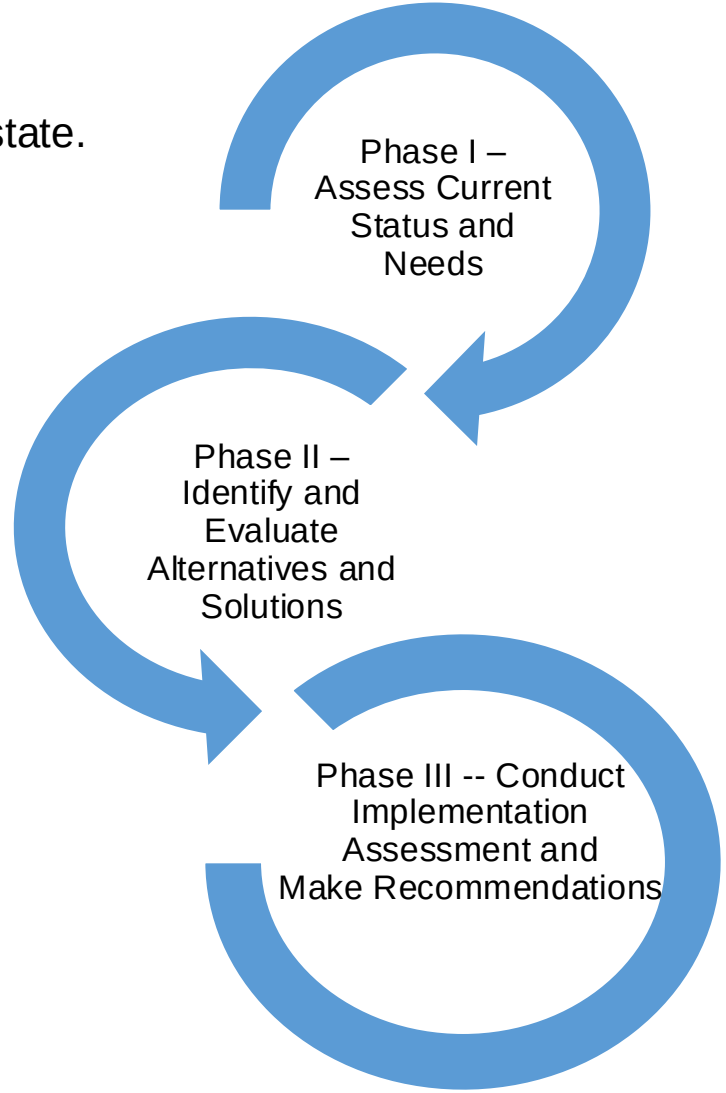
- Questions on structure and Advisory Board versus Focus Area Work Group purview?

Review Process Approach and Work Group Deliberations – Inform

- Approach and Process
- Participation and Engagement
- Resourcing

Approach and Process

- Decision-making to follow a methodical approach.
  - Each FAWG will launch with a webinar and follow same phased approach:
    - Start with understanding the issues and perspectives and assessing current state.
    - Identify and evaluate alternatives and potential solutions.
    - Conduct implementation assessment and make recommendations.
- Success requires:
  - Commit and align
    - Shared commitment and urgency to act.
    - Shared vision and agreement on outcomes.
    - Shared understanding of issues.
  - Engage and enable
    - Broad and equitable participation.
    - Clear and inclusive communications.
    - A structured, data-driven approach to drive informed decision-making.
  - Implement and sustain
    - Gain consensus.
    - Deliver tangible, beneficial outcomes and effectively communicate.
    - Iterate and evolve, as needed.



Participation and Engagement

- Breadth of energy ecosystem represented on Advisory Board.
  - Advisory Board meetings open to the public to view and meeting recordings posted and translated.
  - All Advisory Board materials posted.

- FAWGs open to all to participate and engage.
  - Launching FAWGs via webinars.
  - FAWGs divided into workstreams, allowing stakeholders to self-select interest areas and target time, effort, and resources.

- Direct public engagement.
  - Quarterly, regional meetings to engage directly with communities, conducted in partnership with local organizations and groups.
  - Annual public comment session.
  - OET website and email.

- Participate in local, regional, and national conferences and events.

FAWGs will launch in October via a webinar open to all stakeholders, with materials posted to OET site.
All information provided to Advisory Board will be shared publicly.

Resourcing

- Dedicated staff and support
  - Deputy Executive Director – in process.
  - Issuing an RFP to secure professional facilitation services.
- Fellows
  - Five annually from UMass for next three years.
- Academia and institutes
  - Georgetown Climate Center
  - Harvard Law's Energy & Environment Law Program
  - Rist Institute/UMass Lowell
- External subject matter experts, consultants
  - E3
  - Analysis Group
  - Other

Facilitated Discussion

- Questions or comments on the approach to working through topics and developing recommendations for the Advisory Board's consideration, engagement and participation, or resourcing?

Remarks by Lieutenant Governor Kim Driscoll

Overview of Focus Area Work Groups – Inform/Decide

- **Policy Overview**
  - Including an overview of key policy and regulatory drivers and climate mandates.
- **Transitioning Away from Everett Marine Terminal LNG Facility**
  - Including an overview of natural gas delivery system, Everett Marine Terminal, and current uses of the facility.
- **Decarbonizing the Peak**
  - Including an overview of the regional electric system, peaker plant and combined heat and power facilities, and changing supply and demand.
- **Financing the Transition**
  - Including an overview of the electric distribution system and proposed upgrades, current ratemaking and cost recovery approaches, and comparison to other states.

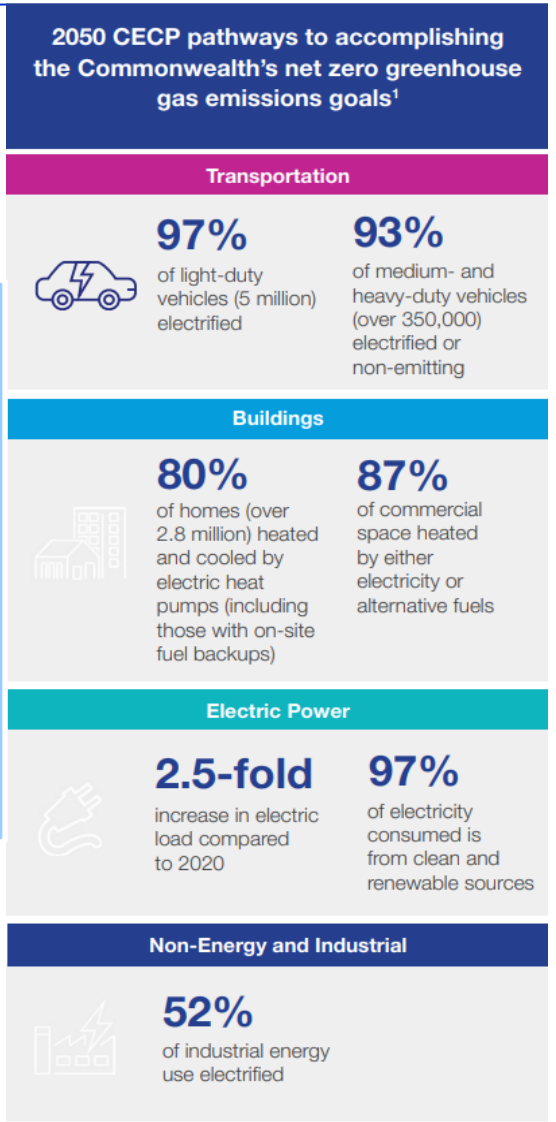
Policy Overview

Massachusetts Climate & Energy Policy

Mandates to mitigate greenhouse gas emissions, drive efficiency, and deploy clean energy

Programs and regulations that implement mandates and achieve climate, clean energy, and consumer-focused outcomes

A focus on equity, affordability, economic opportunity, and environmental justice



Recent DPU Orders Catalyzing OET's Work

- Future of Gas (Department of Public Utilities' (DPU) Order 20-80)
  - Established a new strategy to guide the evolution of the natural gas distribution industry to clean energy to help the Commonwealth achieve its greenhouse gas emissions reduction requirements through decarbonization, electrification, and the adoption of pilot programs for new technologies, while minimizing additional investment and costs to protect ratepayers.

- Everett Marine Terminal LNG facility
  - Required LDCs to transition away from reliance on the EMT LNG facility consistent with the Commonwealth’s climate and clean energy goals, including DPU Order 20-80.

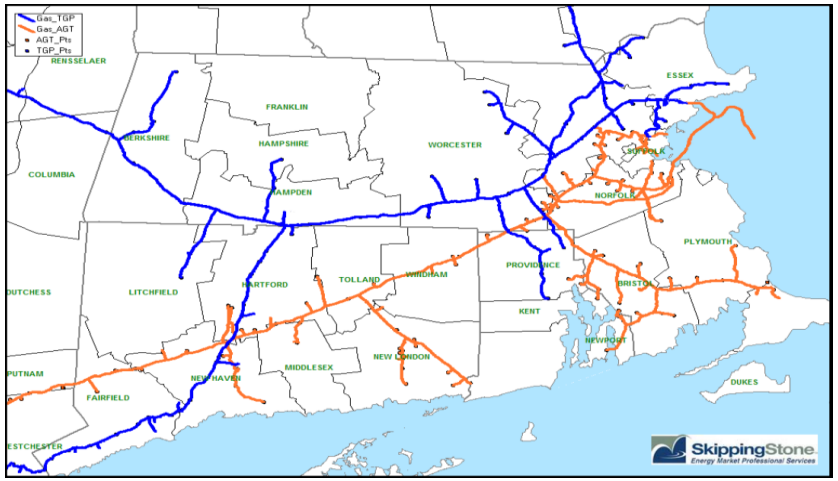
- Electric Sector Modernization Plans (ESMPs)
  - Approved the state’s electric distribution companies (EDCs) strategic roadmaps to enable an equitable and cost-effective clean energy transition in Massachusetts and support the Commonwealth’s decarbonization and electrification goals, consistent with the *2050 Clean Energy and Climate Plan*.

Focus Area Work Group Overview and Proposed Workplan – Transitioning Away from Everett Marine Terminal (EMT)

Where Does Massachusetts Get Its Natural Gas and How Is It Delivered to Customers?

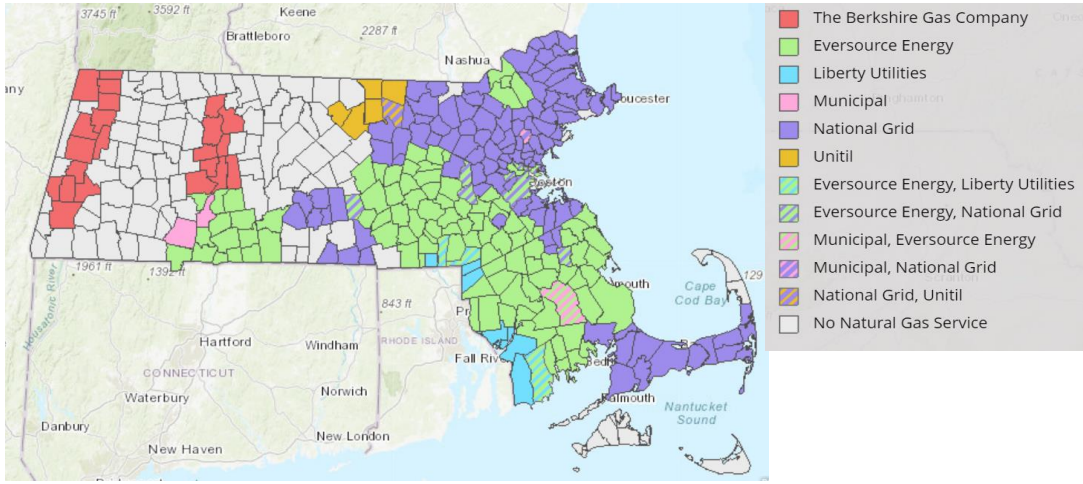
Natural Gas Supply into the Region

- New England has no in-region fossil fuel reserves or production.
- Supplies are delivered via interstate pipelines, tanker ships, and trucks from both domestic and foreign sources.
- New England is at the “end of the pipeline” system, with transmission pipelines terminating in Massachusetts.
- EMT is the only nearby LNG import terminal; LNG is used to meet New England’s demand during extended cold snaps.



Natural Gas Deliveries to Massachusetts Customers

- Massachusetts has approximately 2 million gas customers.
- Most customers receive service from one of five investor-owned local distribution gas companies (LDCs), with some customers receiving service from four municipally-owned gas companies.



What Is the Everett Marine Terminal LNG Facility?

- EMT is an LNG import facility that provides critical supply and peak demand support to New England's gas system, including the low-pressure gas system operated by National Grid in the greater Boston area.
- Located in Everett, MA, it has been in continuous operation since construction in 1971, providing natural gas to the New England region.
- EMT is owned by Constellation Energy.
- On a peak winter day, EMT can provide up to 10% of New England's gas needs.
- The facility directly employs 60 individuals; employees are represented by Utility Workers Union of America Local 369.
- EMT's primary source of revenue came from the natural-gas fired Mystic Generating Station, which ceased operations on May 31, 2024.

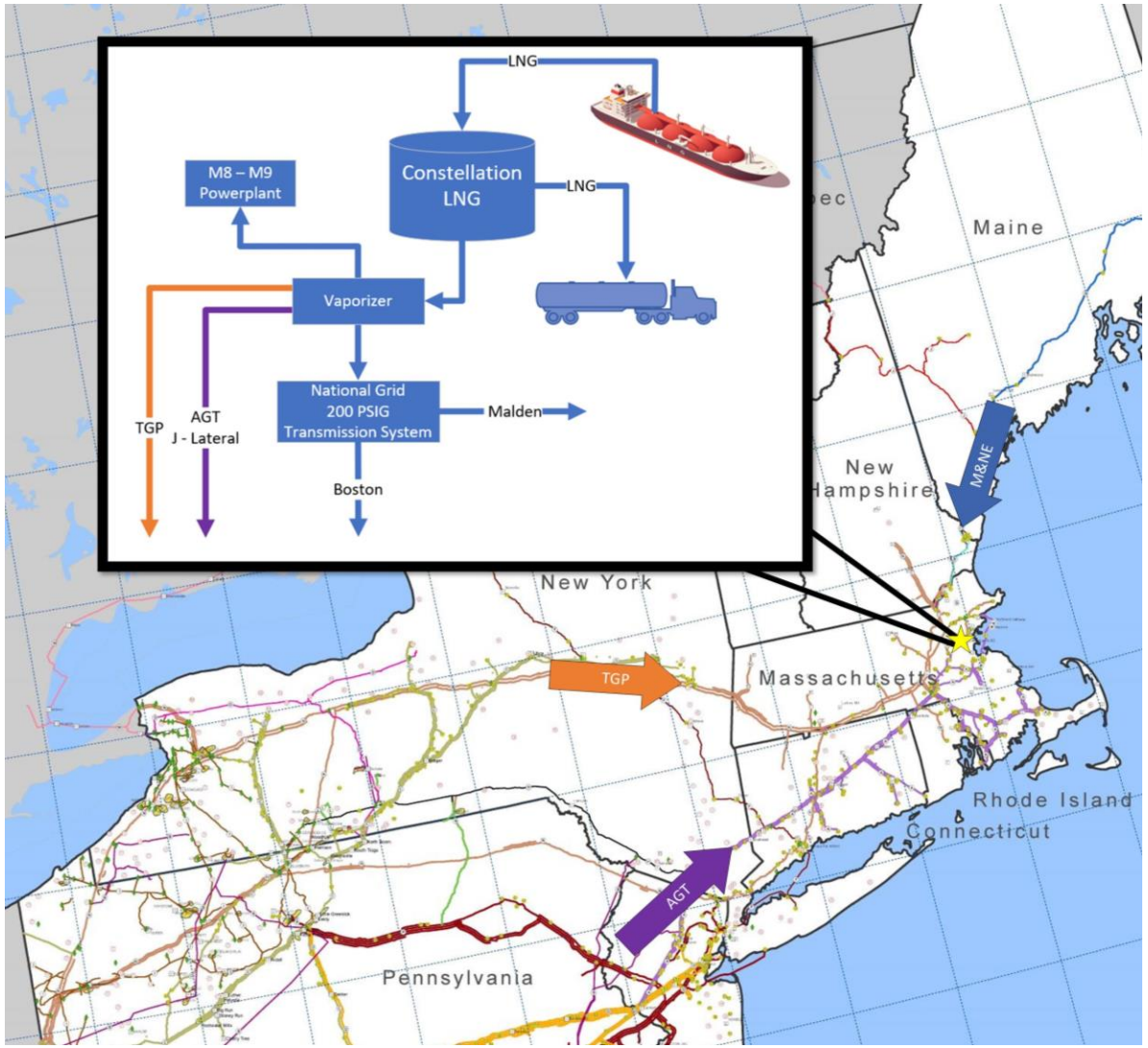
What Role Does the EMT LNG Facility Play in Meeting Natural Gas Demand and System Needs in Massachusetts?

- **Year-round LNG resource:** Can provide year-round support, including during peak weather conditions. Loss of supply can result in loss of service, requiring extensive restoration efforts.

- **Redundancy:** Injects directly into National Grid's system, Algonquin and Tennessee pipelines, mitigating operational and supply challenges resulting from unplanned outages.

- **Gas pressure support:** Massachusetts is at the end of each pipeline system and can experience low pressures.

- **Outages and pipeline flow restrictions mitigation:** Regular pipeline maintenance occurs both on Tennessee and Algonquin pipelines between April and October.



What Is the Status of EMT?

- National Grid, Eversource, and Unitil filed for 6-year supply contracts with EMT in February 2024 and asked for expedited review and approval (by May 1, 2024) by the DPU.

- The Department of Energy Resources (DOER), Attorney General (AGO), Conservation Law Foundation (CLF), Acadia Center, and others intervened.

- DPU’s Order was issued on May 17, 2024, and requires the LDCs to develop transition plans and report on them annually, beginning in April 2025 in the LDC's Climate Compliance Plans.

EMT: Issue Overview and FAWG Mission

- Massachusetts is constrained in its ability to bring natural gas into the state to meet peak demand.
- EMT is used as both a strategic supply resource and to maintain overall system integrity and reliability.
- To maintain access to supplies from EMT, the state's LDCs signed six-year supply agreements, the costs of which are recovered through rates.
- When approving the agreements, the DPU required the LDCs to develop and file transition plans and update the DPU on progress annually, beginning in April 2025.
- EMT is a resource relied upon collectively by the three LDCs that entered into agreements with Constellation LNG, so a coordinated and shared solution is necessary.

Mission

To develop a coordinated strategy to reduce and ultimately eliminate the local gas distribution companies' reliance on the Everett Marine Terminal LNG facility aligned with DPU Order 20-80 and the state's climate and clean energy mandates, including those established in the *Global Warming Solutions Act*.

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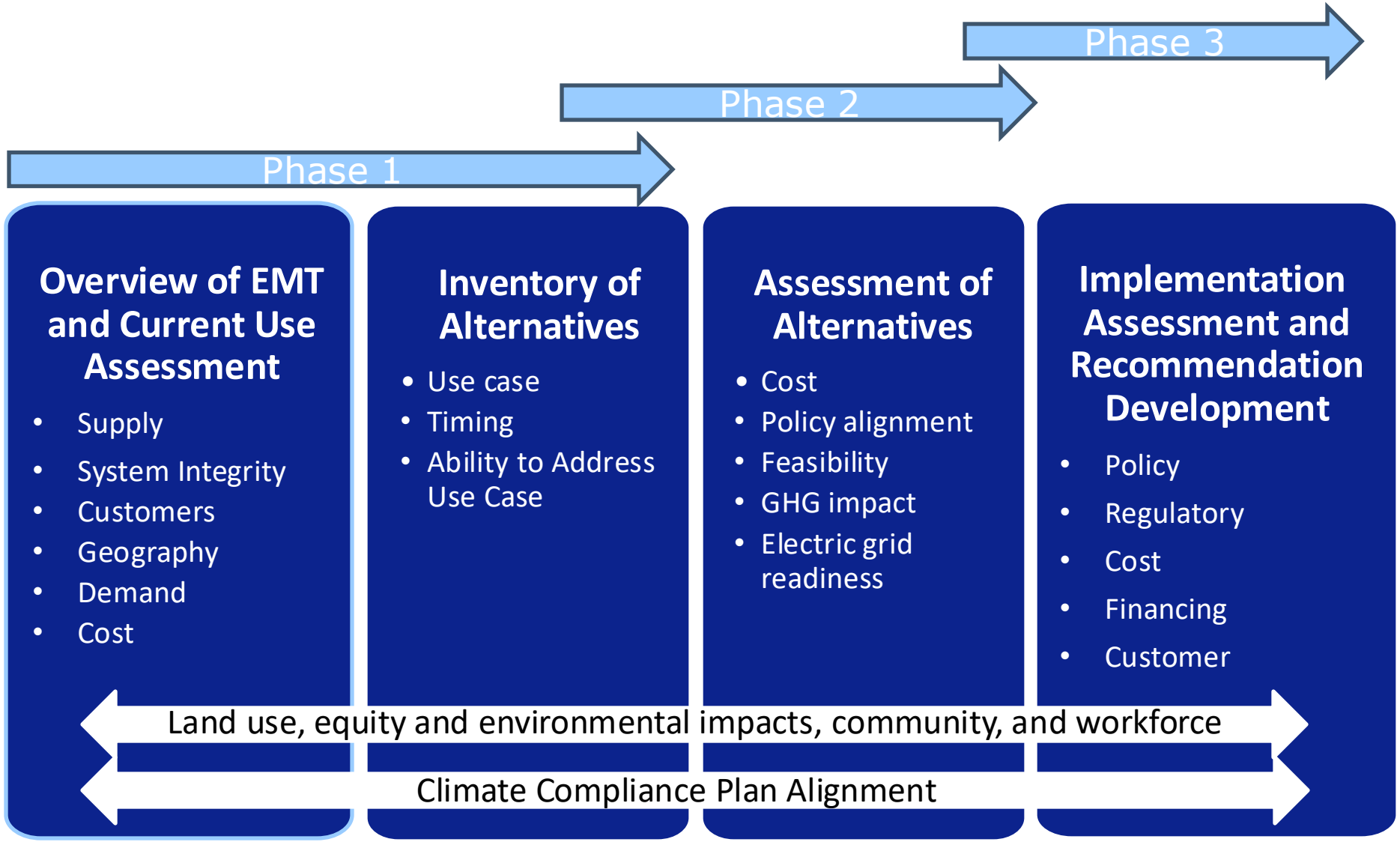
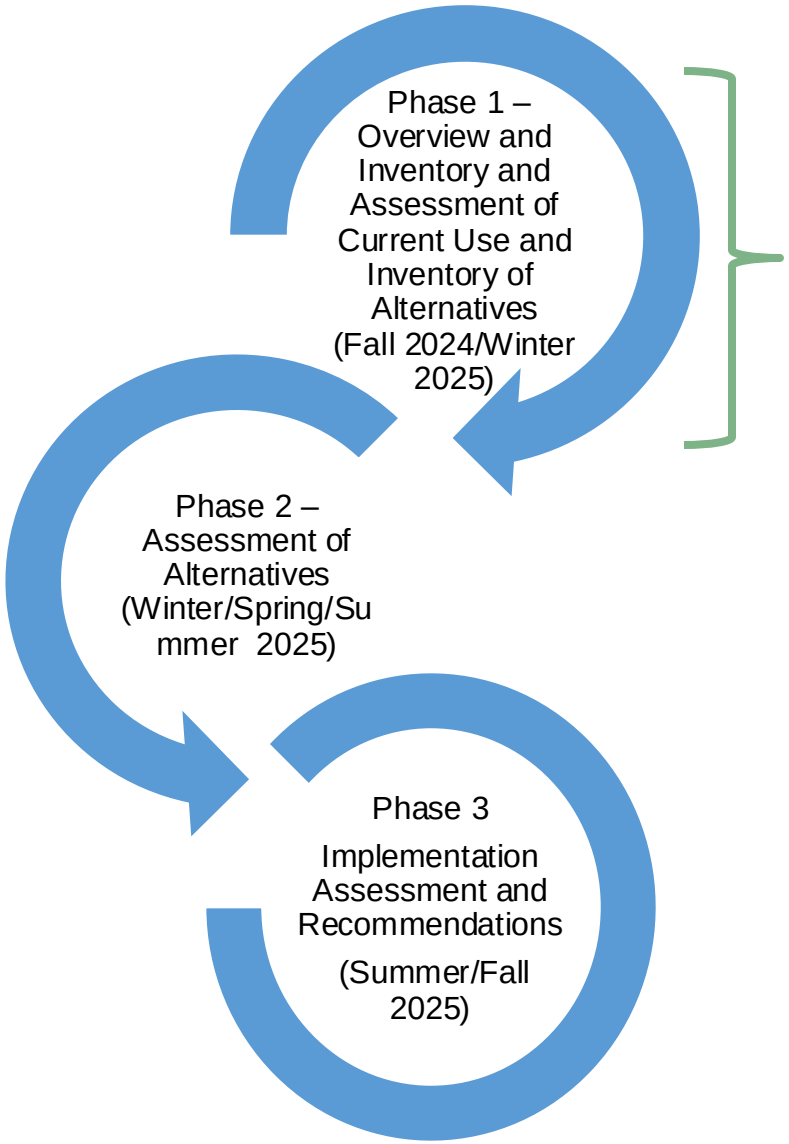
EMT FAWG Workstream – Overview



EMT FAWG Workstream – Phase 1 Focus and Proposed Timelines



Overview of EMT and Assessment of Current Uses and Attributes

- Peak demand projections (customer segment/geography)
- Use cases
  - System support (geography, how often)
  - Supply (volumes, # of days, overall supply stack/other supply sources)
- Existing system operations and impacts (system requirements and impacts of EMT not being available)
- Cost of contracts to customers
- Workforce and community

Inventory of Alternatives

- Alternatives to meet current use cases (by LDC and geography)
- Feasibility and timing (e.g., availability, impact, needs)
- Emissions

April 2025 CCP Filing Alignment

- Parameters
- Level of detail/specificity

Facilitated Discussion and Vote

Discussion

- Questions or comments on the EMT FAWG workplan?

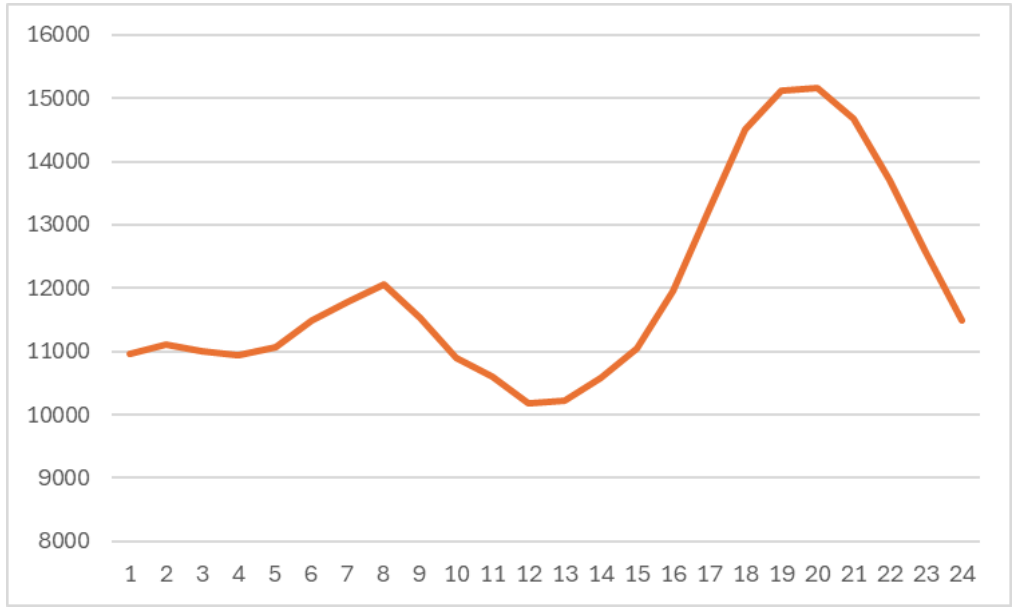
Vote

- High-level approach to EMT FAWG workplan as outlined in this presentation.
- Article 3 of the EMT FAWG By-Laws (Attachment D).

Focus Area Work Group Overview and Proposed Workplan – Decarbonizing the Peak (DTP)

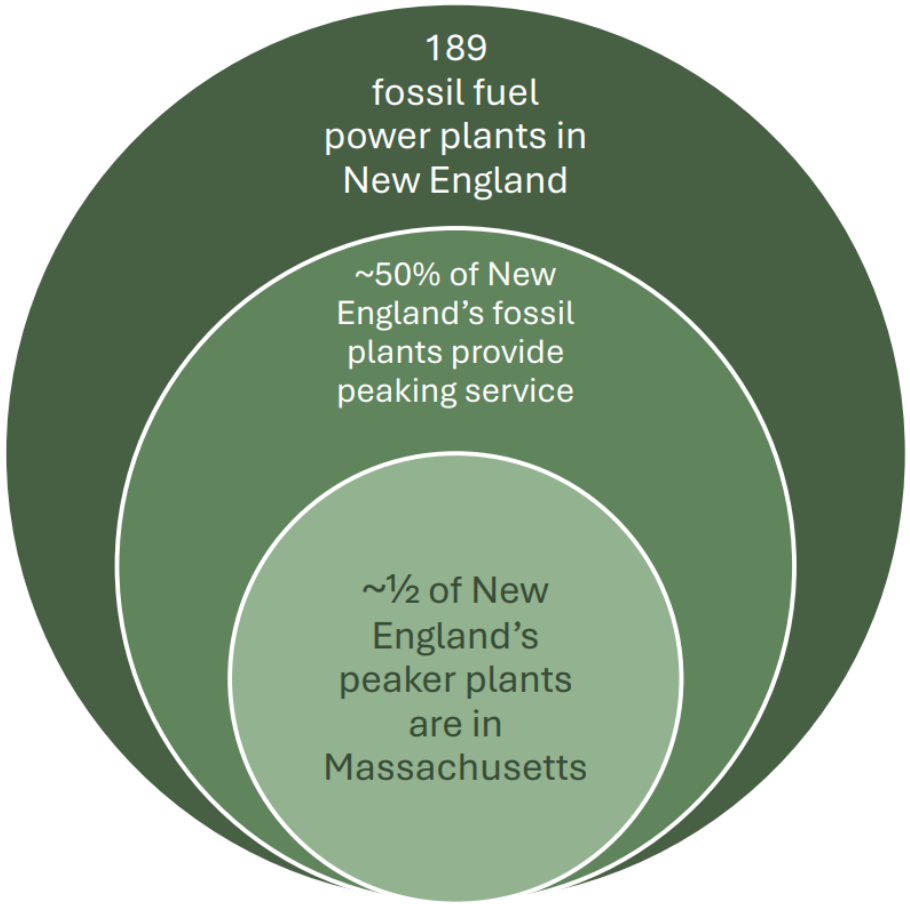
What Is the Peak?

- Electricity consumption fluctuates daily and seasonally.
- The “peak” refers to the maximum demand on an electricity system over a particular time-period; minimum demand is referred to as “base load.”
- The amount of supply available to meet demand fluctuates seasonally and by time of day, particularly renewable resources such as solar and wind.
- Meeting peak demand for electricity and reliably operating the grid today requires power plants that can “ramp” up and down (i.e., supply more or less electricity to the grid).



The daily electricity demand curve for Tuesday, September 5, 2024 from ISO-NE

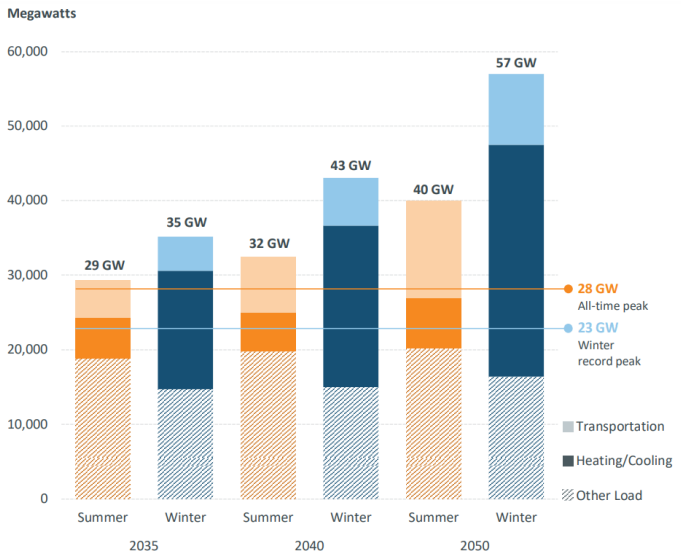
What Are Peaker Plants?

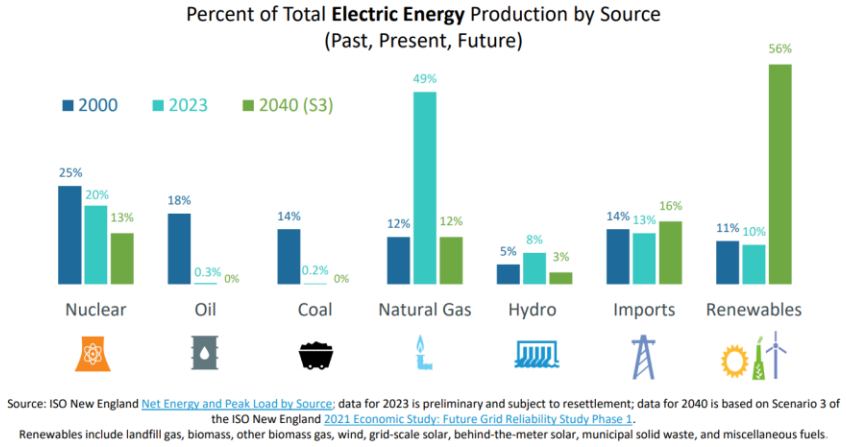


- Can **rapidly increase power production** in response to sharp increases in demand or reductions in supply.
- Play an important role in **ensuring reliability** during times of increased demand.
- **Less efficient** than other plants and often burn fuels like oil, which makes them relatively high emitters.
- Operate in peak demand hours or **emergency situations.**
- The decision to run is strongly determined by **prevailing wholesale market** prices for energy.

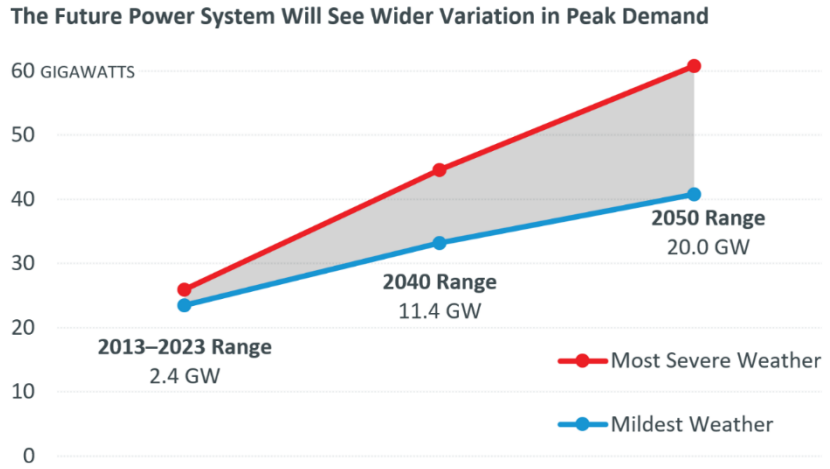
How Is the Peak and Generation Resource Mix Changing?

- According to ISO New England:
  - Peak demand for electricity will double by 2050 and shift from summer to winter in the mid-to-late 2030s.
  - Variable resources, such as solar and wind, will be the dominant generation source.
  - Peak demand could vary significantly on a year-to-year basis depending on if there is a mild or severe winter.





Source: ISO New England Net Energy and Peak Load by Source; data for 2023 is preliminary and subject to resettlement; data for 2040 is based on Scenario 3 of the ISO New England 2021 Economic Study: Future Grid Reliability Study Phase 1.
Renewables include landfill gas, biomass, other biomass gas, wind, grid-scale solar, behind-the-meter solar, municipal solid waste, and miscellaneous fuels.



What Are Combined Heat and Power (CHP) Plants?

- CHP, also known as cogeneration, is the **simultaneous production of electricity and heat from a single fuel source**.
- CHP is a **more efficient use of fuel or heat**, because otherwise-wasted heat from electricity generation is put to some productive use.
- Plants can be located in an individual building or facility or **produce energy for a district or a utility**.
- Massachusetts has approximately 250 CHP systems with a capacity of around 1,575 MW, with most **powered by natural gas**.
- With the generation mix changing and decarbonizing over time, CHP facilities **will become sources of higher emitting generation** on the system.

DTP: Issue Overview and FAWG Mission

- Despite their infrequent operations, peaker plants are higher emitters for the power they provide because they are less efficient than other plants, with some burning fuels like oil.

- Increased reliance on intermittent renewable energy sources like solar and wind, coupled with shifts in the timing and season of peak demand and increased electricity demand due to transportation and building sector electrification, could require more peaking capacity on the system in the coming decades.

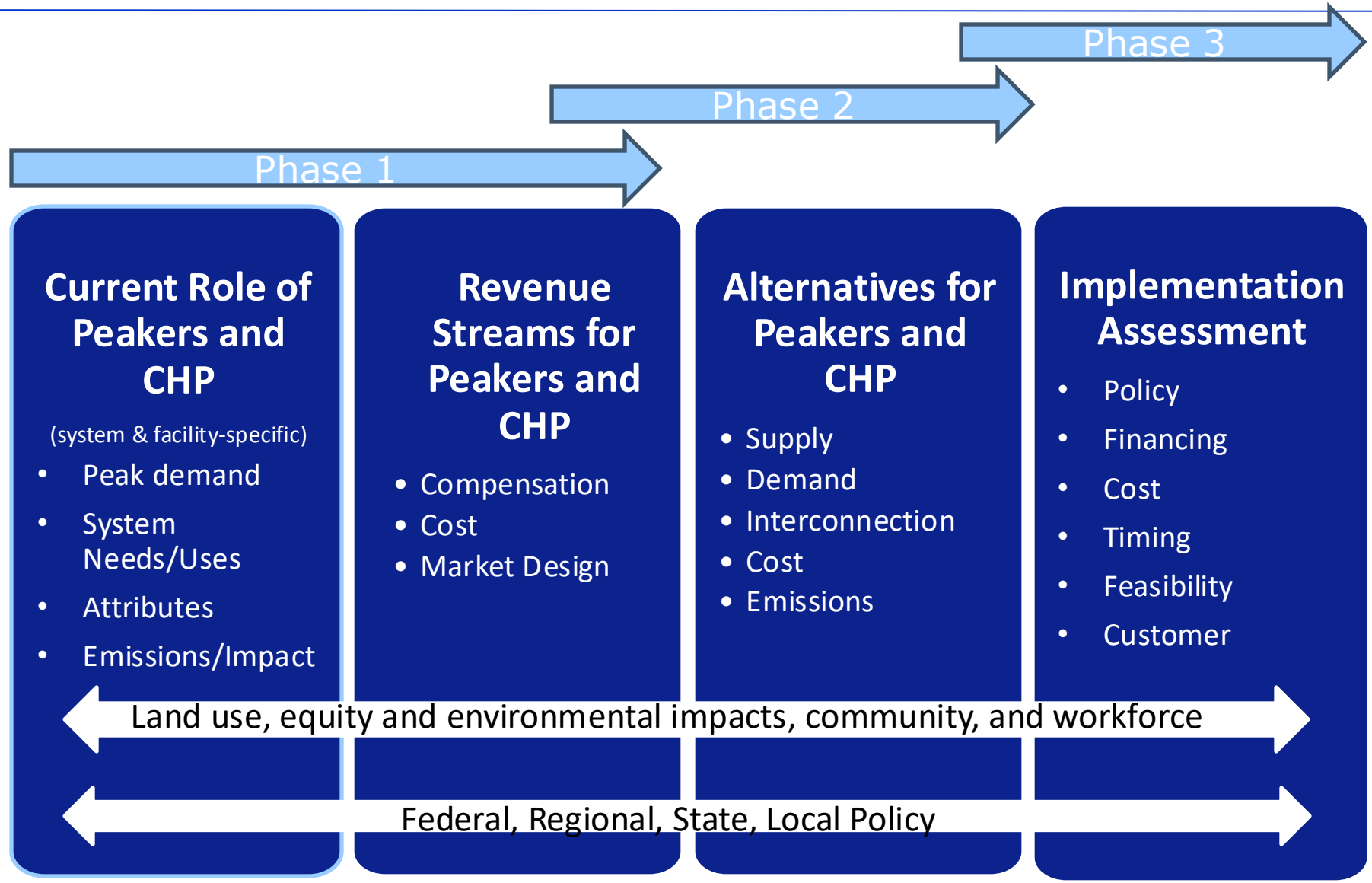
- Most CHP systems operate continuously to reduce regional electricity demand. CHP systems currently play an important role in helping to meet peak demand. As generation in the regional system becomes more decarbonized, CHP systems will need to also decarbonize and/or customers reliant on CHP will need to find other decarbonized means of supporting energy needs. If this shift includes greater utilization of grid power, this could increase peak demand and the need for peaking resources.

- Supply and demand side alternatives are available to reduce and decarbonize the peak.

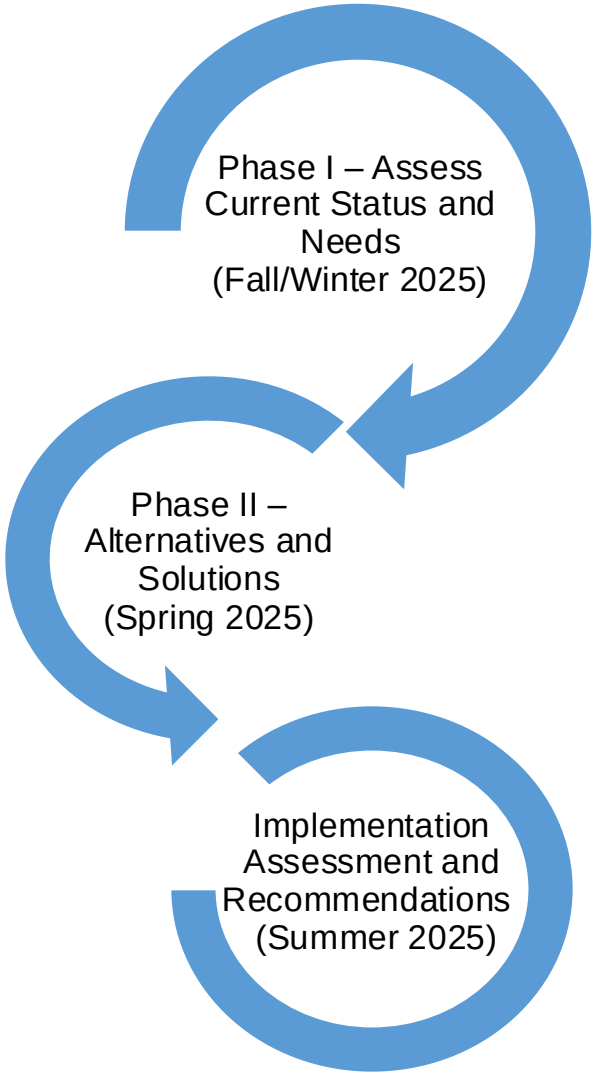
Mission

To identify and demonstrate pathways to reduce reliance on and expeditiously transition away from fossil fuel peaking power plants and combined heat and power facilities by deploying alternative demand and supply side options to meet peak load needs in the Commonwealth, aligned with the electric sector sublimit and clean energy goals established in the *2050 Clean Energy and Climate Plan.*

DTP FAWG Workstream – Overview



DTP FAWG Workstream – Phase 1 Focus and Proposed Timelines

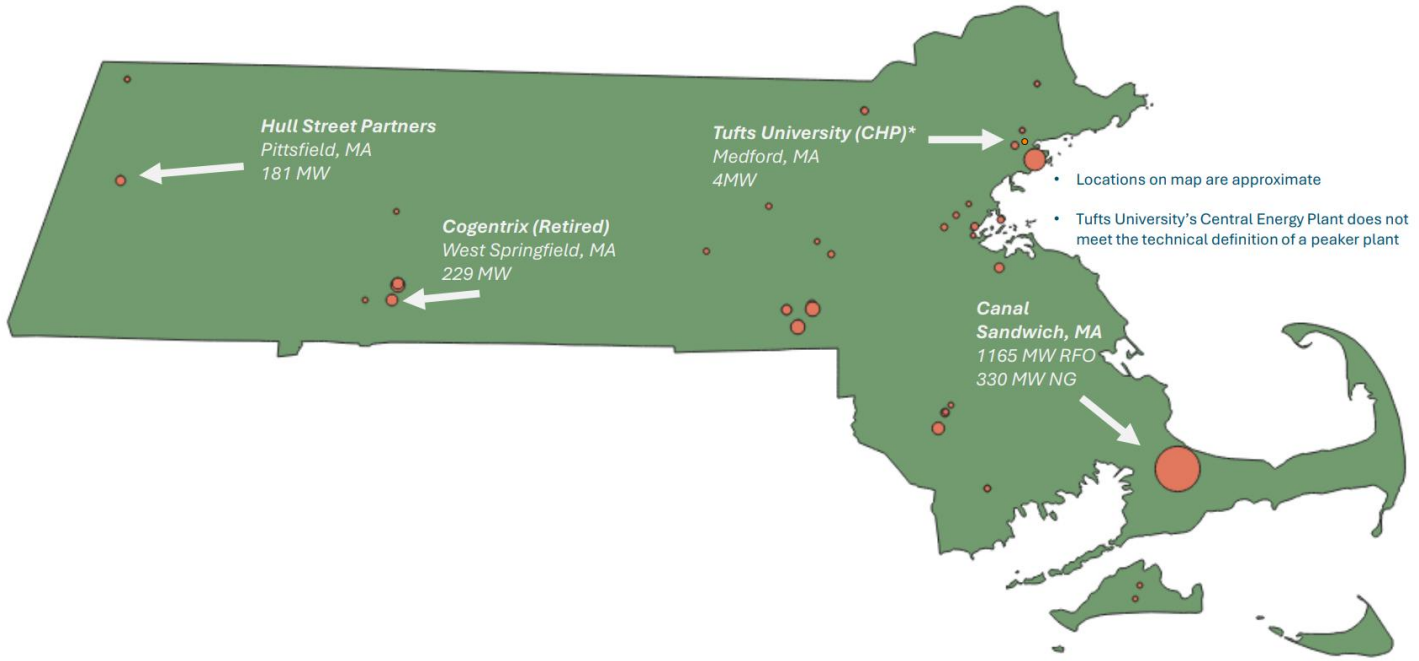


<u>Regional/Statewide Overview Analysis</u>

- Inventory
- Peak demand
- Market and Compensation
- Cost considerations
- Emissions
- Existing policies and incentives

<u>Analysis of Four Facilities</u>

- Plants' Characteristics and Overview (e.g., emissions, workforce, community)
- Market and Uses
- Cost Considerations
- Policies and Incentives Affecting and Utilized by Each Facility



Facilitated Discussion and Vote

Discussion

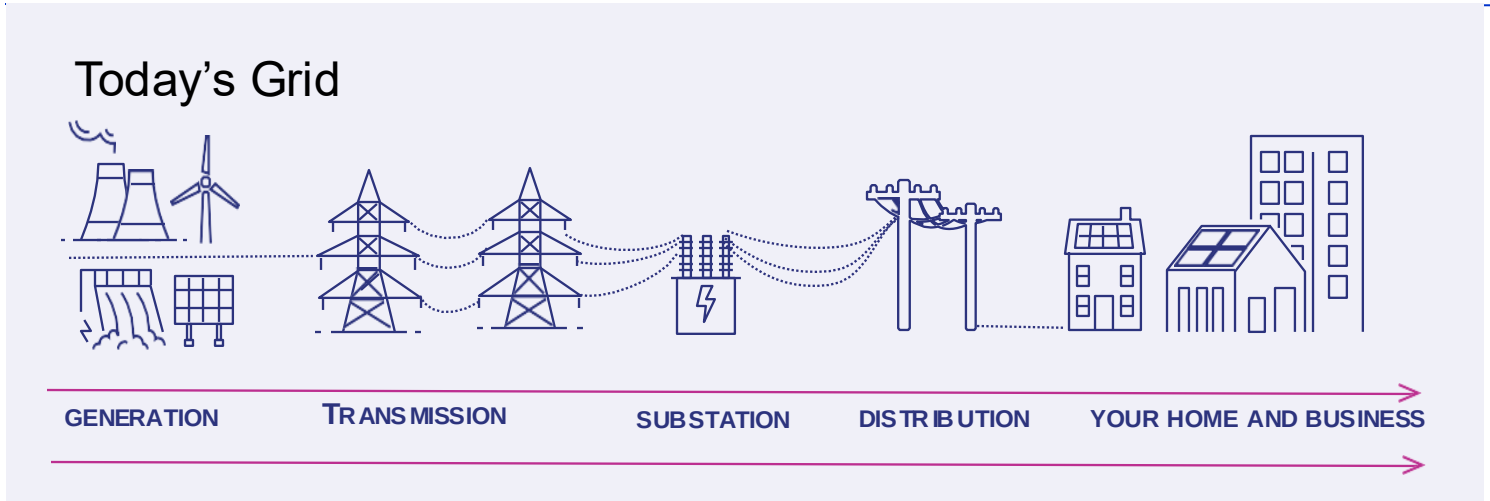
- Questions or comments on the DTP FAWG workplan?

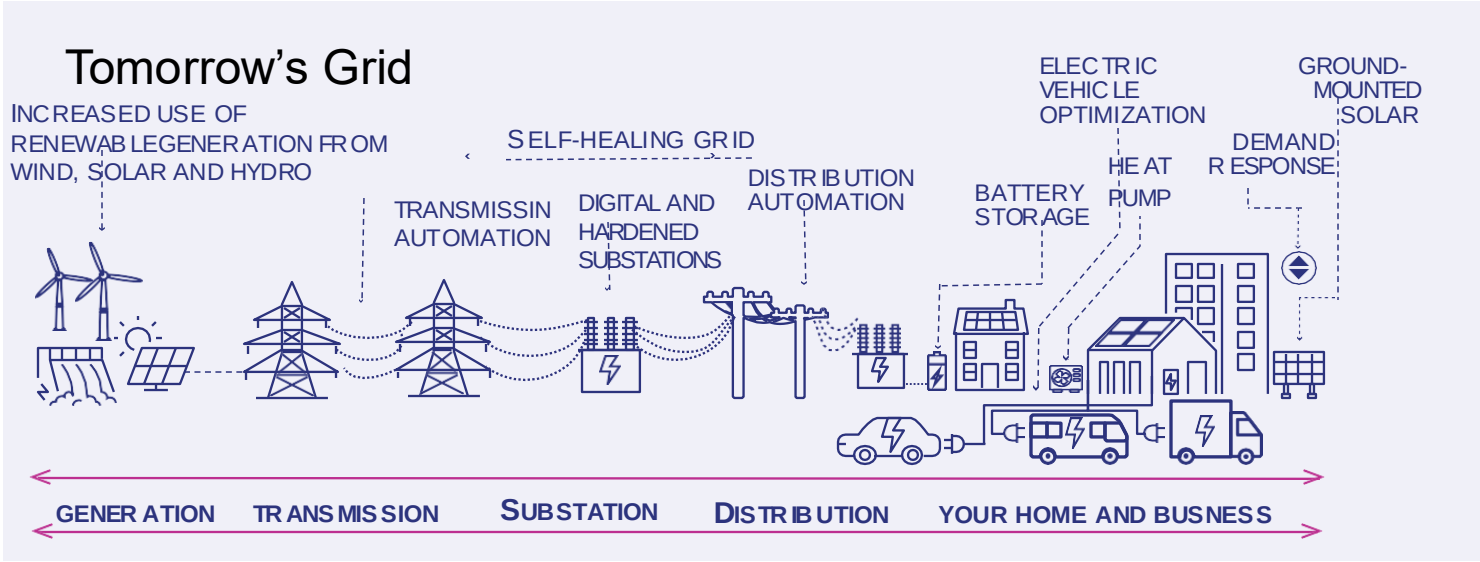
Vote

- High-level approach to DTP FAWG workplan as outlined in this presentation.
- Article 3 of the DTP By-Laws (Attachment E).

Focus Area Work Group Overview and Workplan -- Financing the Transition (FTT)

How Is the Grid Changing and Why Are Investments Needed?





- There are three EDCs and 41 municipal utilities (Municipal Light Plants – MLPs). EDCs serve approximately 90% of electricity consumers.
- EDCs build, maintain, and operate the electric grid, including, transmission and distribution lines, substations, poles, and transformers.
- The way electricity is produced, delivered and consumed is changing, requiring investment in the grid to: connect more clean energy, including solar, wind, and storage; support increasing amounts of electrification from heating and transportation; make it more resilient.
- ESMPs are strategic plans establishing the investments EDCs deem necessary to enable Massachusetts to meet its climate mandates.
- The DPU approved the ESMPs with modification on August 29, 2024 and will launch further proceedings on cost recovery.

Are Other States Making Similar Changes to and Investments in Their Distribution Systems?

Historic and Planned Distribution System Capital Investments, 2017 to 2028

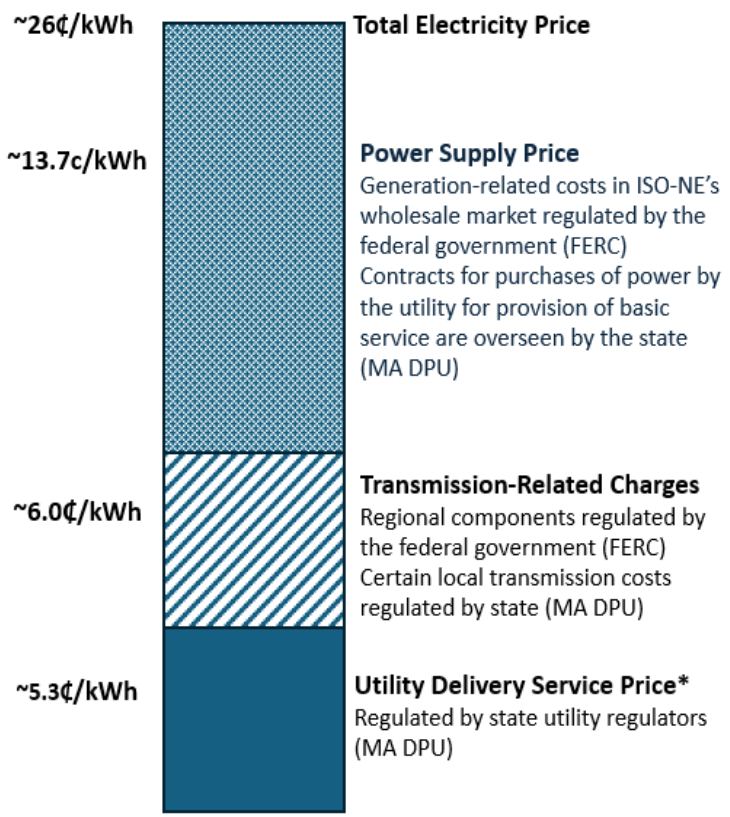
Note: [1] To ensure comparability across utilities, capital spending related to wildfire mitigation is not included for PG&E.

- Investment in modernizing electric distribution systems to perform the functions anticipated by the energy transition is growing nationally.

- Distribution system investments proposed and ongoing to meet different clean energy and decarbonization pathways and mandates in Massachusetts are consistent with a trend in increased investment across other jurisdictions, including California, Illinois, Delaware, and Maryland.

How Are Utility Investment Costs Recovered? Who Regulates What Customers Pay?

Massachusetts Electricity Prices to Retail Consumers
(2022 data – average of electricity sales by investor-owned utilities)



* Local delivery price also includes various surcharges (e.g., for electric vehicle charging investments, renewable energy credits, energy efficiency programs) for state-mandated utility programs..

Data: Energy Information Administration 861 data for electric utilities selling bundled and unbundled electricity; with rough estimate of average local and regional transmission charges.

- The DPU regulates the prices and other terms and conditions of the rates EDCs charge primarily for the local delivery rates; EDCs may not adjust revenue or rates without approval by the DPU.
- EDCs operate under "a cost-of-service model," which provides EDCs the opportunity to recover costs associated with building, operating, and maintaining the system and a reasonable return on investment.
- The electricity prices/rates paid by consumers reflect the cost of:
  - Power supplies
  - Transmission
  - Local delivery (distribution)
- The competitive wholesale power supply market is administered by ISO New England, while transmission-related costs are reviewed and approved by FERC and local electric utility delivery service (or distribution) costs are reviewed and approved by DPU. The process by which EDCs contract for power supply is overseen by the DPU.

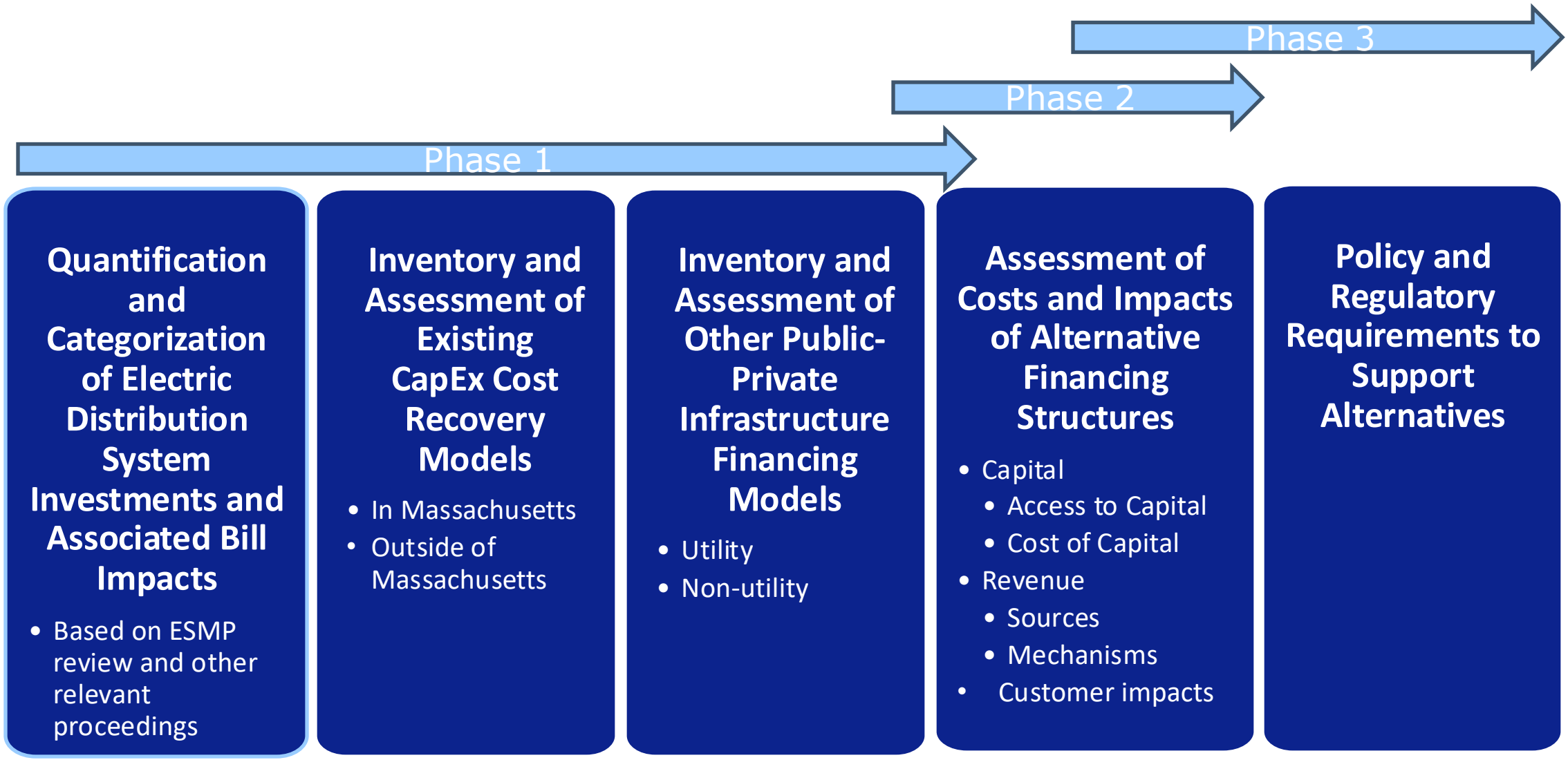
FTT: Issue Overview and FAWG Mission

- Investments in the electric distribution system to enable electrification and clean energy deployment are expected to increase over the next two decades, with the state's EDCs projecting a near-term $5+ billion in investment between 2025 and 2029.
- Currently, the primary financing mechanism for these investments is collecting revenue via electricity rates.
- Energy efficiency and other programs have helped mitigate bill impacts from prior grid modernization investments, even as such investments have increased.
- The pace of needed investment growth over the coming decades has the potential to significantly outpace previous growth rates, with the potential to put upward pressure on electricity bills beyond historical levels (even as electricity sales levels increase with electrification).

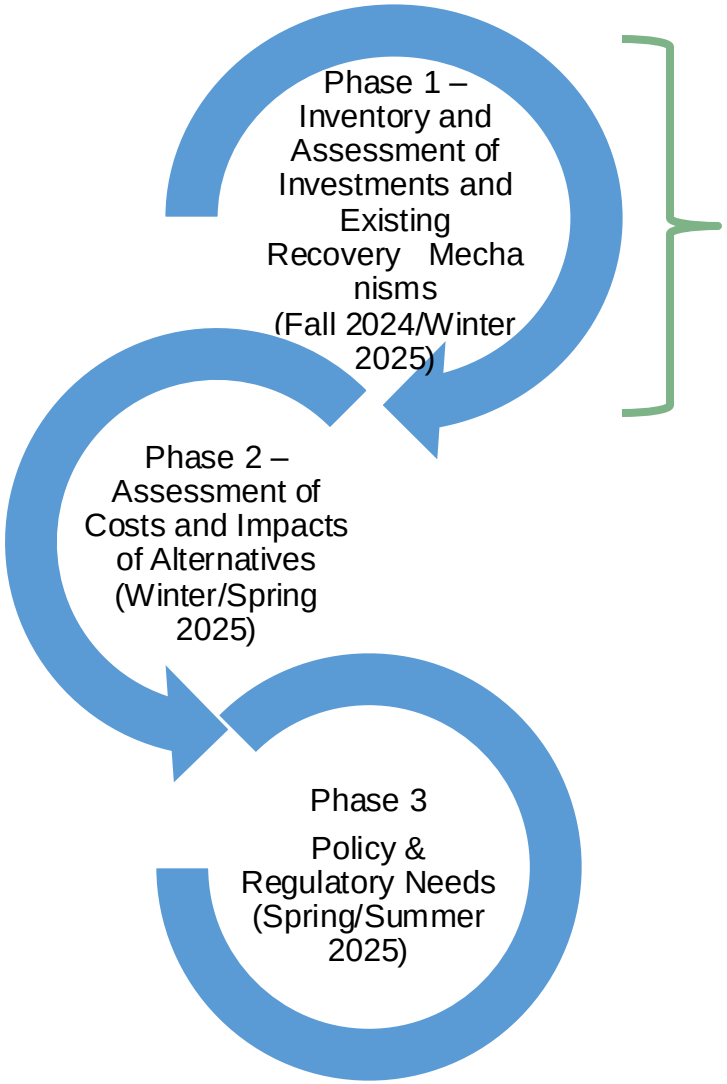
Mission

To identify alternative mechanisms to finance/fund EDC distribution system infrastructure upgrades necessary to achieve the Commonwealth's clean energy and climate mandates that mitigate the cost impacts of the energy transition on consumers' electricity bills, and provide affordable, sustainable, and timely sources of revenue to support needed investment.

Proposed FTT Workstreams



FTT FAWG Workstream – Phase 1 Focus and Proposed Timelines



Investment Needs and Costs

- Projections as identified in each EDC's ESMP and other relevant proceedings.
- Broad characterizations of types of investment vis-à-vis decarbonization goals.
- Comparison to other states.

Recovery Mechanisms

- Current cost recovery mechanisms in Massachusetts.
- Recovery mechanisms in use/under consideration in other states.

Review of Other Financing Options

- Public-private infrastructure partnerships (utility and non-utility).
- Industry restructuring.

Facilitated Discussion and Vote

Discussion

- Questions or comments on the FTT FAWG workplan?

Vote

- High-level approach to FTT FAWG workplan as outlined in this presentation.
- Article 3 of the FTT By-Laws (Attachment F).

Conclusion and Next Steps

- Takeaways and reminders
- Next steps and closing

High-Level Timeline

	July	August	September	October	November	December	January	February	March	April	May	June
Advisory Board Meeting			9/30/24 -- Workplans/ Charters				EMT CCP Recs Review				DTP/ Finace Update	
EMT FAWG												
Develop Workplan												
Finalize Stakeholders												
Full FAWG Meetings				Webinar Kickoff								
DTP FAWG												
Develop Workplan												
Finalize Stakeholders												
Full FAWG Meetings				Webinar Kickoff								
Financing FAWG												
Develop Workplan												
Finalize Stakeholders												
Full FAWG Meetings				Webinar Kickoff								

Adjourn

Thank you!