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

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENERGY RESOURCES

Grid Modernization Advisory Council

June 15, 2023

Agenda

Item	Time
Welcome, Agenda, New GMAC Member Intros, Roll call	1:00 - 1:10
Information Request & Executive Committee updates	1:10 – 1:20
Public comment	1:20 – 1:35
Previous meeting topic reflections	1:35 – 1:50
Topic 1: ESMP-Relevant Dockets and Working Groups	1:50 – 2:50
Break	*2:50 – 3:00*
Topic 2: Draft ESMP Outline Review	3:00 – 3:55
Close & Next Steps	3:55 – 4:00

New GMAC Member Introductions

Welcome to three new GMAC member appointments:

- **Julie Curti**, Metropolitan Area Planning Council, Representing municipal or regional interests
- **Galen Nelson,** Designee for the Massachusetts Clean Energy Center
- **Jonathan Stout**, Dana-Farber Cancer Institute, Representing large commercial and industrial end-use customers

Roll call alphabetically by voting and then non-voting members

Update on Information Request

- One information request was made during the last GMAC meeting
  1. During its forecasting presentation to the GMAC Meeting on 5/11/2023, National Grid showed slide 9 summarizing its 2050 ground-mounted PV forecast heatmap and referenced other similar heatmaps available for other technologies. A councilmember requests that National Grid provide heatmaps for the other available 2050 forecast predictions.

National Grid provided the similar heatmaps, which are posted on the DOER GMAC website under Information Request #1: "2050 Forecast Predictions Heatmaps from National Grid"

Executive Committee Meeting Updates

- Executive Committee meeting schedule and registration links for the public posted on the GMAC website
- Discussed meeting agenda topics for June and July GMAC meetings.
  - July GMAC meeting to include topics of (1) Stakeholder Engagement and (2) Equity
- Discussed stakeholder engagement and public comment process. For the GMAC's awareness, we plan to make the following updates:
  - Expand the July 13th meeting by thirty minutes to start at 12:30 to accept general public comment.
  - Expand the August 10th GMAC meeting by one hour to start at 12 to accept public comment on the draft ESMP outline.

Public Comment

- 15-minute period for public comments
- Time limit of 3 minutes per comment

Reflections on Previous GMAC Meeting Topics

- In the previous GMAC meetings, Topic 1 covered Planning 101 and Topic 2 covered Forecasting 101

Do GMAC members have any further comments or questions on either topic?

Topic 1: ESMP-Relevant Dockets and Working Groups

Docket and working group summaries will be shared by GMAC members and their designees

Topic	Speaker
State climate goals and targets Working groups (CETWG, EVICC, GSEP, EFSB)	Elizabeth Mahony, DOER
Working groups (TSRG, ESIRG, WDT, IIRG)	Rick Labrecque, Agilitas Energy
Grid modernization (dockets and AMI SH Working Group)	Larry Chretien, Green Energy Consumers Alliance
Electric vehicle charging infrastructure programs	Amy McGuire, Highland Electric Fleets
Provisional System Program capital investment projects (CIPs) and long-term system planning	Mrinmayee Kale, New Leaf Energy
Energy Efficiency Three-year plans Future of Gas investigation	Kyle Murray, Acadia Center
Rate cases and performance-based ratemaking	Liz Anderson, Attorney General's Office
Utility-owned solar energy projects	
Distribution system reliability, resilience, and safety dockets	Representative from the EDCs
Utility-owned storage investment plans	

State Climate Goals and Targets – Emissions Limits

- The statewide emissions limit for 2050 was set at **Net Zero**, defined as:

  "A level of statewide greenhouse gas emissions that is equal in quantity to the amount of carbon dioxide or its equivalent that is removed from the atmosphere and stored annually by, or attributable to, the Commonwealth; provided, however, that in no event shall the level of emissions be greater than a level that is 85 percent below the 1990 level."

- Sector-specific sublimits are set at levels slightly more stringent than necessary to achieve the required 85% GHG reduction target to allow for some margins for error in meeting each of the sector-specific sublimits.

Emissions Limit and Sector-Specific Sublimits for 2050

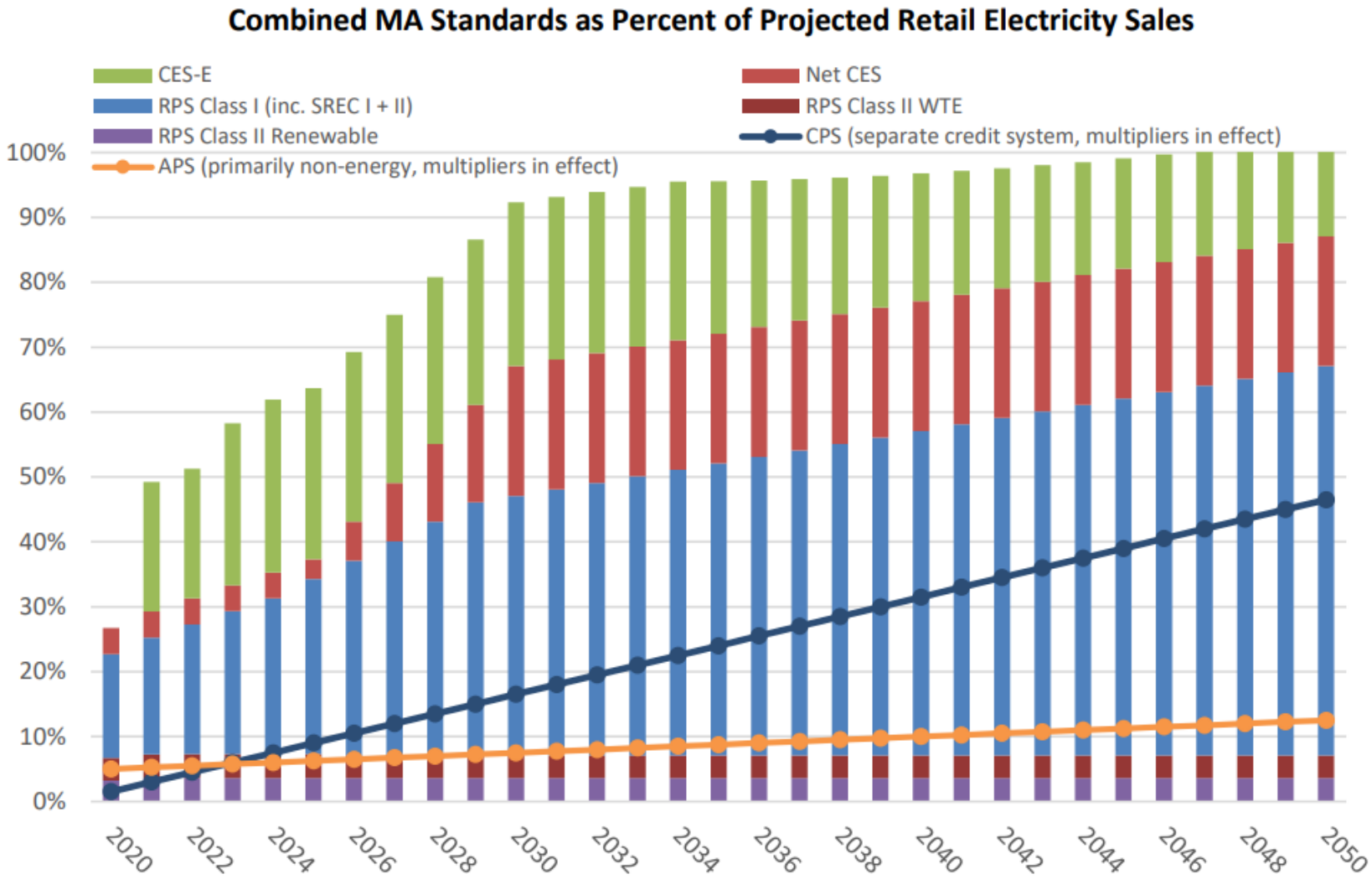
Emissions Limit & Sublimits	Emissions Limit as a % Reduction from 1990	Emissions Limit Expressed in $MMTCO_2e$*
Statewide Limit	**85%**	**14.0**
Sector-Specific Sublimits		
Transportation	86%	4.1
Residential Heating and Cooling**	95%	0.8
Commercial & Industrial Heating and Cooling**	92%	1.2
Electric Power	93%	2.0
Natural Gas Distribution & Service	72%	0.5
Industrial Processes	-27%	0.8

Determination Letter of Emissions Limit and Sublimits for 2050:
https://www.mass.gov/doc/determination-letter-for-the-2050-cecp/download

Further goals publicly available in the Clean Energy and Climate Plan for 2050, Clean Energy and Climate Plan for 2025 and 2030, and the 2050 Decarbonization Roadmap

State Climate Goals and Targets - Standards

- The 2050 CECP noted in the Phased pathway:
  - By 2030: ~8+ GW of solar PV in Massachusetts
  - By 2030: ~20 GW solar PV in all of New England
- Massachusetts currently has ~4.3 GW of solar PV.
- Policy tools such as the Renewable Energy Portfolio Standard (RPS), the Alternative Energy Portfolio Standard (APS), the Clean Peak Standard (CPS), and the Clean Energy Standard (CES) will continue to promote clean energy adoption.



Note: The CES-E percentage over time has been calculated assuming that retail load grows following the trajectory set out in the 'All Options' pathway in the *Energy Pathways to Deep Decarbonization* report.

Stakeholder Working Groups

- **Clean Energy Transmission Working Group (CETWG)**
  - Established by the 2022 Climate Law and charged with providing a comprehensive cost analysis of major transmission infrastructure upgrades that may be needed to deliver clean energy generation
  - Required to assess and report on any necessary transmission upgrades required to support the deployment of clean energy projects including but not limited to offshore wind projects.
  - 17 members from DPU, DOER, AGO, TUE, industry, EDCs, and municipal interests.

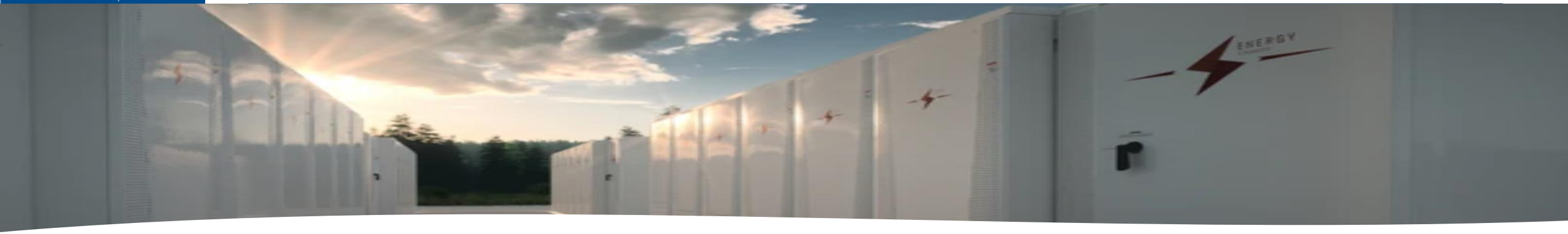
- **Electric Vehicle Intergovernmental Coordinating Council (EVICC)**
  - Established by the 2022 Climate Law and charged with assessing and reporting on strategies and plans necessary to deploy electric vehicle charging infrastructure to establish an equitable, interconnected, accessible, and reliable electric vehicle charging network across the Commonwealth.
  - Required to regularly seek data and input related to electric vehicle charging stations, fueling stations and related infrastructure, equipment, equipment maintenance and technology from stakeholders.
  - 11 members from EEA, DEP, DOER, DOT, MBTA, HED, A&F, DPU, Chairs from TUE, and regional planning agency.
  - EVICC information, including meeting materials, can be found here.

Stakeholder Working Groups

- **Gas System Enhancement Plan Working Group (GSEP)**
  - Established by the 2022 Climate Law and charged with developing recommendations and legislative changes to align the GSEPs with statewide emission limits, as well as encourage development of geothermal systems.
  - 19 members from DPU, DOER, AGO, DEP, TUE, EDCs, LDCs, middle- and low-income resident advocates, municipalities, labor unions, and nonprofits.
  - GSEP information, including meeting materials, can be found here.

- **Energy Facilities Siting Board (EFSB)**
  - Independent state board that reviews proposed large energy facilities including power plants, electric transmission lines, intra-state natural gas pipelines, and natural gas storage tanks.
  - To obtain EFSB approval, a proposed facility must demonstrate that it would provide a reliable energy supply, with a minimum impact on the environment, at the lowest possible cost.
  - 9 members from EEA, DPU, DOER, DEP, HED, and public members for labor, energy and the environment.
  - More information on the EFSB can be found here.

Stakeholder Working Groups

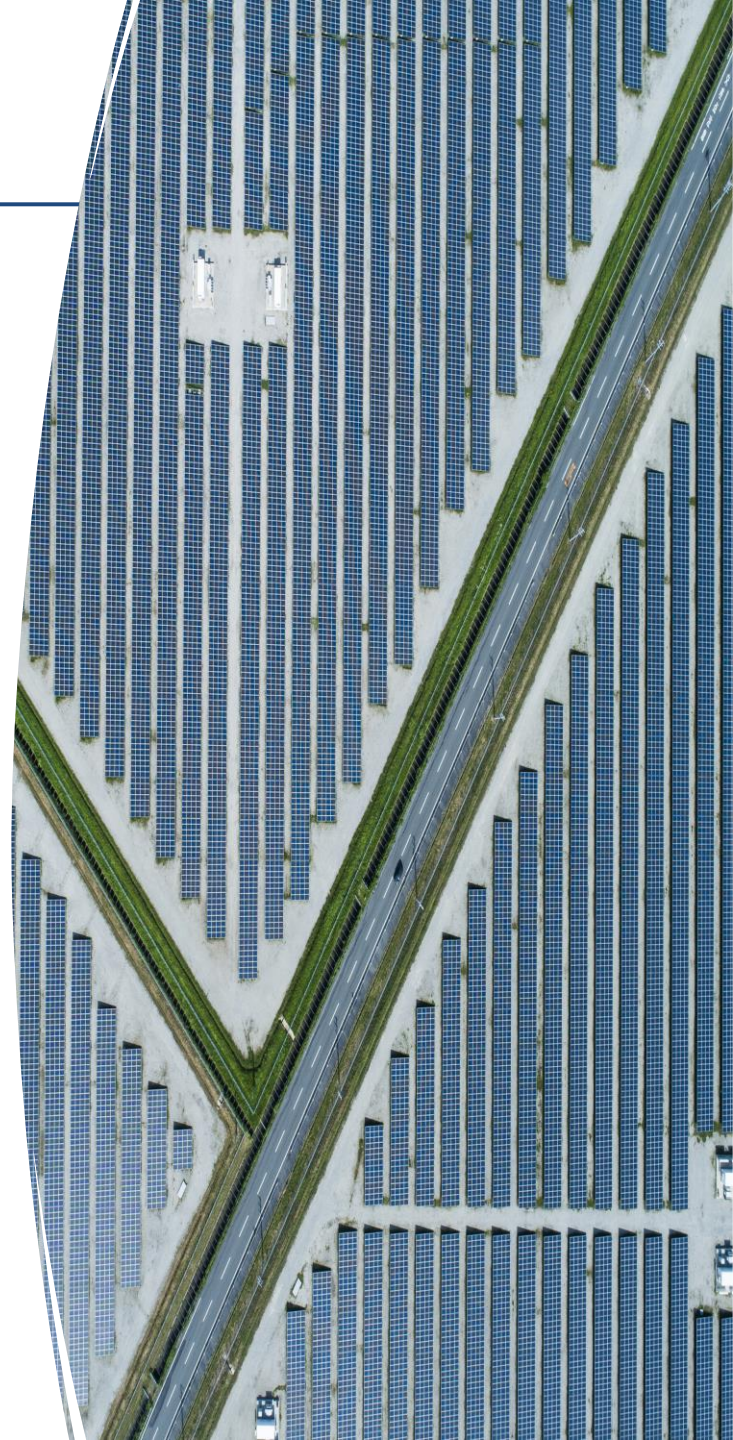


- **Technical Standards Review Group (TSRG)**
  - Launched in 2013 by an agreement between the DG Working Group members to discuss technical standards for DG interconnection.
  - 7 members: 1 from each EDC, 3 non-EDC reps who are engineers with experience
  - Issues addressed: RTUs, witness testing, BESS operating schedules, etc.
  - TSRG By-Laws and other information can be found here.
- **Energy Storage Interconnection Review Group (ESIRG)**
  - Established by DPU Order 19-55-E on 2/9/2022 to discuss energy storage topics related to interconnection and processes overseen by the DPU.
  - 14 members from EDCs, industry, AGO, DOER, NECEC; and an Advisory Panel of ISO-NE, MassCEC, and IREC.
  - Issues addressed: Operational Requirements, Rate and Tariff Applicability, System Impact Study costs, etc.
  - Reports periodically to the DPU DG Ombudsperson.

Stakeholder Working Groups

- **Wholesale Distribution Tariff Working Group (WDT)**
  - *An Act Driving Clean Energy and Offshore Wind* (2022) directs distribution companies to file a wholesale distribution service rate schedule for standalone ESS transacting in New England's wholesale electricity markets.
  - An offshoot of the ESIRG launched on October 27, 2022, to draft a wholesale distribution tariff that will be filed at FERC.
  - Participants are from the EDCs, NECEC and industry.
  - DOER, AGO and ISO-NE recently invited to participate.

- ***New* Interconnection Implementation Review Group (IIRG)**
  - D.P.U. Order 19-55-F directs the DG and Clean Energy Ombudsperson to facilitate establishment of the IIRG.
  - The Order highlights the significant work the DPU has already undertaken in this matter and acknowledges that there are more topics that require consideration.
  - The IIRG will provide a forum for identification and discussion of issues related to DG Interconnection to ensure continued review of DG Interconnection standards and procedures.
  - First meeting was held on June 12, 2023.



Grid Modernization Dockets

- **10/7/22**: DPU issued Order (D.P.U. 21-80-A/D.P.U. 21-81-A/D.P.U. 21-82-A) preauthorizing continuing grid-facing grid modernization investments of $473M for 2022-2025.
- **11/30/2022**: DPU issued Order (D.P.U. 21-80-B/D.P.U. 21-81-B/D.P.U. 21-82-B) preauthorizing certain new grid-facing and customer-facing investments and preliminarily approving certain customer-facing investments, for a total of $1.2 billion ($80 million for new grid-facing investments, $937 million for core advanced metering infrastructure (AMI) investments, and $232 million for preliminary approval of supporting AMI investments).
- DPU set term limits to ensure the deployment is on schedule and benefits to customers can be realized as early as possible. The EDCs will implement technologies to dynamically manage & operate DERs interconnected to the grid and deploy AMI meters in the next few years.

Grid Modernization Dockets – Cost Recovery & AMI Rollout

- Costs for grid-facing investments will be collected annually through the pre-existing Grid Modernization Factor ("GMF") cost recovery mechanism outside of base rates.
- Costs for the AMI investments will be collected annually through a new AMI cost recovery mechanism outside of base rates; in Eversource's last rate case, D.P.U. 22-22, Eversource's AMI tariff was approved.

Advanced Metering Infrastructure (AMI) Planning and Rollout

- Eversource: 2023 Q1 (Start planning) – 2028 Q2 (Full AMI Implementation)
- National Grid: 2023 Q2 (Start planning)- 2027 Q2 (Full AMI Implementation)

DOER
Massachusetts Department of Energy Resources

AMI Stakeholder Working Group

Schedule and Focus Areas

Proposed order	Focus area	Project implications	Explanation	Timing
1	Billing of TVR offered by competitive suppliers	High	To preserve AMI timeline, CIS and MDMS replacement/modernization projects are *in-flight now*; TVR business requirements should be determined before functional designs are locked	March-May 2023
2	AMI deployment strategies that may expedite the ability for competitive suppliers to offer TVR products	Medium	Deployment strategies may impact network design, regional timelines and the duration of the deployment, which are critical inputs into the SOWs for the AMI equipment vendor and installation sourcing strategy. Target date for completion of those SOWs is Q3 2023	June-Aug. 2023
3	Customer and third-party access to usage data	Low	Customer and permissible third-party access will be accommodated; the delivery mechanisms, format and consent requirements are not critical core system business requirements; customer engagement platform SOW tentatively targeted for late 2023, with business requirements to be defined in 2024	Sept.-Nov. 2023
4	Customer education and engagement	Low	No core system implications; customer engagement platform SOW tentatively targeted for late 2023, with business requirements to be defined in 2024	Jan.-March 2024
			Solicit input on draft final report	April-May 2024
			Submit final report	June-July 2024

EV Charging Infrastructure Program: Overview

Approved Utility EV Program Budgets

	Eversource	National Grid	Unitil
Public and workplace segment	$109.1 million	$94.7 million	$538,000
Residential segment	$52.7 million	$64.1 million	$300,000
Fleet segment		$30 million	
Fleet assessment services	$1.25 million		
MHD EJ community fleet pilot	$3 million		
Off-peak charging rebate program		$3.8 million	
Company staffing	$9.6 million	$9.2 million	
Marketing	$10.1 million		$160,000
IT and back-office system upgrades	$280,000	$1.8 million	
Program evaluation	$2 million	$2.4 million	
TOTAL	**$188 million**	**$206 million**	**$998,000**

EV Program Notes

- Eversource
  - DPU 21-90
  - Phase II EV Program
  - $188M over four years
- National Grid
  - DPU 21-91
  - Phase III EV Program
  - $206M over four years
- Until
  - DPU 21-92
  - Phase I EV Program
  - $998,000 over five years
- Budgets are caps, but there is flexibility in that funds may shift spending between program segments and between years

References: D.P.U. 21-90, Exh. ES-KB-3; D.P.U. 21-91, Exhs. NG-EVPP-1, at 123; NG-EVPP-2; D.P.U. 21-92, Exhs. CSVG-1 (Rev.) at 32-33, 36, 50; CSVG-9

EV Charging Infrastructure Program: Components

- **Public and workplace segment**
  - Included in Eversource and National Grid proposals, not Unitil
  - Rebates intended to reduce financial barriers for site hosts to deploy EV charging
  - Aimed at publicly accessible sites to serve the general public and the greatest number of customers, as defined by the Massachusetts EV Incentive Program (MassEVIP)
- **Residential segment**
  - For 1-4 unit dwellings: Low-income customers can receive 100% EVSE rebates
  - For multi-unit dwellings (>4 units): Tiered EVSE incentive levels based on income/EJ status
- **Fleet segment (see below for Eversource's fleet pilot)**
  - National Grid only
  - Available exclusively to public fleets, inclusive of transit and government fleets
- **Fleet assessment services**
  - New budget approved for Eversource only
  - For public fleets and small, private fleets in EJ communities
  - National Grid to continue with public transit, school bus, and government fleet services

EV Charging Infrastructure Program: Components

- **Medium- and heavy-duty (MHD) Environmental Justice (EJ) community fleet pilot and Direct Current Fast Charging (DCFC) EJ Hub**
  - Pilots proposed by Eversource only
  - EVSE rebates for public MHD fleets serving EJ communities, inclusive of school buses, community transport services, last mile delivery, and mass transit
  - DCFC EJ Hub will fully develop through a stakeholder process, needs assessment, and solicitation for owners/operators
- **Off-peak charging rebate program**
  - Extension of existing National Grid program
  - Eversource plans to use data from the program to develop a similar program
- **Administrative Costs**
  - Company staffing
  - Marketing
  - IT and back-office system upgrades
  - Program evaluation

EV Charging Infrastructure Program: Metrics

- **Performance Metrics**
  - Proposed
    - 5-statewide implementation metrics
    - 2-statewide program benefit metrics
    - Company-specific metrics
  - None were approved at this time
  - Stakeholder process was deemed necessary to develop metrics that appropriately track implementation and benefits (underway)
- **Performance Incentive Mechanisms (PIMs)**
  - Proposed
    - Cost containment (Eversource and National Grid)
    - Clean Fleet, Clean Air (National Grid)
  - None were approved at this time
  - DPU expects financial impacts of the EV programs to be minimized and the stakeholder process will support that
- **Evaluation Plan** – Joint, statewide plan expected once Performance Metrics are finalized
- **Annual Reports** – Due on or before May 15 each year

EV Charging Program: Cost Recovery and Bill Impacts

- **Cost Recovery Proposals**
  - All proposed to defer certain EV program costs and this was denied
  - **Eversource**
    - Directed to create a separate reconciling cost recovery mechanism for targeted recovery of EV program costs – EV Program Factor
  - **National Grid**
    - Directed to continue cost recovery through its approved EV Program Factor
  - **Unitil**
    - Directed to recover costs through its GMF due to the program's relative size and scope but with EV program investments clearly distinguished
- **Bill Impacts**
  - All bill impacts were found result in "just and reasonable" rates

EV Charging Program: Demand Charge Alternatives

- **Load Factors**
  - Will rely on annual load factors based on the average monthly load over the previous year
- **DCA Rate Term**
  - Ten-year term established as appropriate balance for price certainty and stability for developers and electrification and decarbonization goals of the Commonwealth
- **Ancillary Load**
  - Defined narrowly as non-EV charging load that is essential to operation of the EV charging station
  - Unnecessary for cap on the % of ancillary load eligible for inclusion in the DCA rates
- **DCA Rate Implementation**
  - Not necessary to implement immediately, but rather within 6 months
- **Metering Options**
  - Utility-owned meters approved for data collection, with the caveat that appropriateness may be reconsidered as embedded EVSE meter and EV telematics technology improves over time
- **Transition Plan**
  - As an initial step toward a transition plan, reporting on DCA rate implementation is required in utility annual reports
- **Time-varying Rates**
  - Required by August 11, 2023 under 2022 Clean Energy Act
- **Customer Outreach**
  - Directed to use direct mail, bill inserts, emails, website postings, and communication with municipal officials

EV Charging Program: Residential TOU Rate (Unitil)

- Proposal approved
- Overview
  - Separately metered EV TOU rate for residential customers to incentivize off-peak charging
  - Three-part design
    - On-peak non-holiday weekdays
    - Mid-peak non-holiday weekdays
    - Off-peak
- Implementation experience should inform future TOU rates as required by the 2022 Clean Energy Act

Long Term System Planning & Provisional Program

2019	2020	2021	2022-2023
Docket 19-55 Established. Among many topics Cost Allocation proposals were solicited for: ***(1) Residential and small commercial DG facilities*** ***(2) Medium and large DG facilities***	**Stakeholder Proposals; Technical Conference on Cost Allocation Proposals** **Docket 20-75 Established** ***(1) Straw Proposal for system planning analysis and (2) Assignment/ Recovery of Costs***	**Feedback on DPU Straw Proposal and Information Requests surrounding near-term Implementation** **DPU Order on the establishment of a Provisional Program**	**Filing of Capital Investment Projects pursuant to Provisional Program; pending DPU Decisions**

Long-Term System Planning: DPU Straw Proposal & Stakeholder Feedback

DPU Straw Proposal

1. Direct EDCs to expand distribution planning to:
   - Perform a rolling ten-year assessment of distribution system
   - Identify upgrades to accommodate forecast load growth and facility interconnection*
   - Department to establish planning criteria
   - Planning/Assessment process identify "Capital Investment Projects" for special ratemaking treatment
   - Proposes recovery though Reconciling Charge and Capital Investment Project Fees

2. Create a new cost assignment framework by:
   - Establish a dollar-per-kW Capital Investment Project Fee
   - Collection fees credited to the reconciling charge for period of 10 years
   - Subject to a 1.5% Annual Rate Cap

*Facility interconnection inclusive of DER subject to DG interconnection tariff but not other Distributed Energy Resources

Stakeholder Feedback

- Cited urgency due to increasing study delays and costs
- Raised needs to include technologies and bulk improvements to accommodate DERs; coordination with Transmission Owners and ISO New England
- Raised concerns of establishing cost assignment methodologies that acknowledge full range of beneficiaries
- Common agreement that approach would improve interconnection cost and timeline certainty
- Raised concerns of forecasting methodologies and transparency of stakeholder process; establishment of a technical committee.
- Developers identified cost caps associated with Capital Investment Fees

Provisional Program

Provisional framework established to plan and fund essential upgrades to the EPS to foster timely and cost-effective development and interconnection of Distributed Generation of pending DER (Group Studies). These infrastructure proposals are called Capital Investment Projects or CIPs

EDC proposed CIPs that

- include enablement for future DER
- include distribution customer upgrades to support reliability and capacity needs
- require additional transmission enablement

As of June 1, 2023 the Marion Fairhaven CIP has been approved; the remaining proposals are pending

Group Study	Pending MW	Total Enabled MVA	CIP Docket	Fee
Marion-Fairhaven	48.1	136	22-47	$370/kW
Freetown	23.3	52	22-51	$490/kW
Dartmouth-Westport	16	60	22-53	$387/kW
Plainfield-Blandford	13.7	40	22-52	$498/kW
Plymouth	116.6	346	22-54	$224/kW
Cape Cod	72.4	296	22-55	$357/kW
Barre-Athol	40.9	75	23-09	$617/kW
Gardner-Winchendon	33.9	54.1	23-06	$327/kW
MPL-East	17.8	79.1	22-170	$432/kW
Shutesbury	19.99	29.992	22-61	$418/kW
Spencer-Rutland	82	99.7	23-12	$574/kW

Massachusetts Energy Efficiency Three-Year Plan

- Green Communities Act requires all electric and gas Program Administrators to develop energy efficiency plans every three years that "provide for the acquisition of all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply."
- The participating Program Administrators issue a Three-Year Plan that outlines the budgets, economic benefits, and energy savings for the statewide energy efficiency programs, branded as Mass Save®. Included in the Three-Year Plan are descriptions of energy efficiency incentive programs that are planned to be implemented during the three years of each plan. These programs are for residential, income eligible, and commercial and industrial (C&I) buildings.
- An Act Creating A Next-Generation Roadmap For Massachusetts Climate Policy, which was signed into law in March of 2021, also requires the establishment of a greenhouse gas emissions (GHG) reduction goal for the three-year Mass Save® Energy Efficiency Plan.
- Green Communities Act also established the Energy Efficiency Advisory Council and directed Program Administrators, in coordination with the Council, to prepare a three-year, statewide energy efficiency plan.

Three-Year Plan Timing

- Three-year planning workshops-In advance of planning year
- EEAC priorities – In advance of draft plan (previously ~March of planning year)
- Draft Plan – March 31st (previously April 30)
- Public Comment Sessions – Before & after draft plan released
- EEAC Resolution – ~July
- Term Sheet – September/October
- Final Draft Plan submission to EEAC – Mid-late October
- Final Plan submission to EEAC – By October 31st
- DPU ruling on Plan – Within 120 days of submission of Plan (previously 90 days)

Future of Gas Investigation, DPU 20-80

- Began with a petition in June of 2020 from then Attorney General Healey
- Requested that the DPU "initiate an investigation to assess the future of local gas distribution company ("LDC") operations and planning in light of the Commonwealth's legally binding statewide limit of net-zero greenhouse gas ("GHG") emissions by 2050"
- Also asked the DPU to "to develop policies and a regulatory framework to ensure an orderly and fair transition to a clean energy heating sector, to ensure continued safe and reliable gas service even as demand declines, and to ensure that consumers do not pay unnecessary costs"

Future of Gas Timing

- DPU investigation opened – October 2020
  - Directed LDCs to initiate a joint request for proposals for an independent consultant to conduct a study and prepare a report within the parameters discussed in the Order
- Consultants initiated stakeholder process that included comment opportunities, technical sessions, and stakeholder meetings
  - Throughout process, some stakeholders raised issues with modeling assumptions by Consultants
- LDCs submitted Consultant Report, Common Regulatory Framework, and Individual LDC-Specific Net Zero Enablement Reports – March 2022
  - Some stakeholders criticized these reports for being overly focused on RNG & Hydrogen and repeating modeling issues raised during stakeholder process

Future of Gas Timing Pt. 2

- DPU issued public hearing notifications and procedural schedule and sought written comment – March 2022
- Over next few months DPU held technical sessions and issued information requests to the LDCs
- LDCs filed Final Joint Comments – July 2022
- Stakeholders filed Final Comments – October 2022
- Next Steps?

Rate Cases and Performance Based Ratemaking (PBR)

- In Eversource's rate case, the DPU approved a new mechanism called the "K-bar" that allows for annual cost recovery of capital costs based on the following considerations (D.P.U. 22-22, at 60-61):
  - During the PBR term, NSTAR Electric will need flexibility to address the evolving energy and climate policies governing EDCs, as well as to maintain aging infrastructure and enhance resiliency to address the impacts of climate change.
  - To address these issues and keep pace with the Commonwealth's growing electrification needs and ambitious climate targets, the Company likely will need significant capital investments to develop a dynamic and modern distribution network.
  - The Department anticipates that the Company may identify several capital projects to achieve these objectives during the development of its electric sector modernization plans pursuant to G.L. c. 164, § 92B. The Department recognizes that required investments will go beyond the Company's grid modernization proposals approved in Second Grid Modernization Plans, D.P.U. 21-80-B/D.P.U. 21-81-B/D.P.U. 21-82-B (November 30, 2022).
  - The Department also finds that any capital investment program must encourage prudent investments while maintaining efficiencies and appropriate cost control measures.
  - Further, while capital spending will be critical to achieve the Commonwealth's growing electrification needs and ambitious climate targets, a multi-year rate plan should have reasonable and predictable rate impacts for distribution customers, especially given the volatility of deregulated energy supply.
- K-bar cost recovery is in addition to capital costs recovered in separate trackers (Grid Mod, CIPs, EVs, etc)

Utility-Owned Solar Energy Projects

Section 77 provides an exemption to the prohibition on utility-owned generation and allows electric and gas distribution companies to own and operate solar generation facilities, paired, where feasible, with energy storage, on company-owned land. In allowing this exemption, Section 77 cites several policy objectives, including:

- assisting municipalities at high risk from the effects of climate change in furthering their climate adaptation and resiliency goals;
- contributing to the Commonwealth meeting its carbon emissions limits established in G.L. c. 21N, § 3;
- promoting the development of solar energy projects in environmental justice communities and giving preference to municipalities with environmental justice populations for participation in company-owned solar energy projects;
- job creation;
- peak demand reduction; and
- system resiliency.

Each distribution company could seek to own up to approximately 286 MW of solar generation, which would total approximately 2.5 GW if each of the nine electric and gas distribution companies in the Commonwealth pursued projects up to the statutory cap.

- This number reflects the statutory cap. It does not consider land use or availability, cost, or other factors.

EDC Overview

1) Distribution system reliability, resilience, and safety dockets
   a) Distribution and Transmission Annual Reliability Reports (“ARR”)
   b) Annual Service Quality Performance Reports
   c) Reporting of outage events via Outage Reporting Protocol ("ORP")
   d) Vegetation Management Programs
   e) Annual Emergency Response Plans
2) Utility-owned storage investment plans

Annual Planning and Reliability Report

2023 Distribution and Transmission Annual Reliability Reports ("ARR"):
Eversource – 23-ARR-02; Unitil – 23-ARR-04; Massachusetts Electric and Nantucket Electric – 23-ARR-01

A ten-year load growth forecast at the substation level:

- 90/10 forecast econometrically modeled relating historic peaks to Temperature Humidity Index

Company's T&D design and planning criteria and how those criteria are applied:

- NERC, NPCC, ISO-NE for transmission, and Company Distribution Planning Criteria for distribution

Operating study focused on contingency analysis:

- Evaluate impact of transformers / transmission supply contingencies
- 5-year solutions or corrective actions planned for facilities

A Resiliency Report and Heat Maps:

- Electric load
- Load capacity constraint
- Customer outage experience (duration and number of outages)

EDC Service Quality Performance Metrics

Safety and Reliability Measures

- System Average Interruption Duration Index ("SAIDI") and
- System Average Interruption Frequency ("SAIFI")

Poor Circuit Remediation/PPC

- Circuit Average Interruption Duration Index ("CKAIDI")
- Circuit Average Interruption Frequency Index ("CKAIFI")

Customer Service and Satisfaction Performance Measures

- Service appointments kept as scheduled
- Customer Complaints and credit cases filed with the Department

2022 Service Quality Reports:
Eversource – 23-SQ-13; Unitil – 23-SQ-10; Massachusetts Electric – 23-SQ-11; Nantucket Electric – 23-SQ-12

EDC Service Quality Information

- Customer Average Interruption Duration Index values for the ten most recent years
- IEEE 1366-2003 electric reliability on an annual basis, which is not subject to penalty. Calculations will be based on a sustained interruption of more than one (1) minute
- Electric Distribution Line Loss
- Customer satisfaction surveys
- Information as to the customer payments credited because of the customer service guarantee program during the service measurement period.
- Time it takes from receiving an emergency call to the time the company crew begins addressing the emergency matter
- Response to Priority 1, 2, and 3 downed-wire calls
- Incidence Rate of Injuries, Illnesses and Restricted Work Cases Per 200,000 Employee Hours

Planned and Unplanned Outages

- EDC is required to maintain, on a real-time basis, information regarding planned and unplanned outages that occur on its distribution system. Each company's outage report can be accessed by Department staff via a secure internet-based Outage Reporting Protocol ("ORP") system. The ORP information includes, for example:
  - The location of the outage;
  - Number of customers affected;
  - Number of circuits affected or out of service;
  - Likely cause;
  - Any bodily injury; and
  - Whether a critical facility, such as a hospital, is involved.
- Each company annually files a report of all customer outages that occurred on its system in the prior year.

Vegetation Management - Distribution

Regulatory framework

D.P.U. 11- 85/11-119 series of Orders sets vegetation maintenance requirements thought two main programs - Base (maintenance) vegetation management and Resiliency tree work. Both programs are reviewed by EPD staff for approval through their annual compliance filings, cost recovery filings, and electric distribution rate cases

Programs overview

Base (maintenance) vegetation management

- Cycle-based management approach (each circuit is trimmed to certain specifications on a four-to-five-year cycle)
- Mid-cycle pruning performed where needed
- Hazard and Risk Tree Programs
- Invasive Species (emerald ash borer, Asian long-horned beetle)

Resiliency Tree Work ("RTW") or Enhanced Vegetation Management ("EVM")

- Applies enhanced vegetation management practices in support of improving reliability performance
- Cost recovered through an annual RTW cost recovery mechanism outside of base rates
- Trees are removed in coordination with the cycle pruning schedule
- Removed trees are reported to DPU

Annual Emergency Response Plans

- The annual emergency response plans ("ERPs") detail the EDCs' plans to respond to any emergency event such as hurricanes or snowstorms. The EDCs are required to file their ERPs annually, including actions taken to prepare for an emergency event.
- The ERPs are established pursuant to 220 CMR § 19.00, "Standards of Performance for Emergency Preparation and Restoration of Service" for Electric Distribution and Gas Companies and "Emergency Response Plan Guidelines" for the EDCs.
- The Department reviews the prudency and appropriateness of emergency response and storm restoration costs incurred by the EDCs. This action is performed when an EDC petitions the Department for recovery of such costs. The Department can also open an investigation into an EDC's emergency response actions should the Department feel that a company performed poorly during the planning or restoration stages.

EDC Energy Storage Systems (ESS)

EDC defines the deployment of energy storage as a distribution grid solution:

- As part of the planning process, the Company identifies scenarios where ESS solutions would be most beneficial.
- Energy storage can be classified as a Non-Wires Alternative (NWA) solution to defer traditional projects
- Chief potential value is providing on-demand, targeted, and timely solution to the grid
- Requires the utility to own and operate energy storage as a flexible source of power

Projects in early planning phase:

Hyde Park (ES): 15MW/20MWh

Industrial Park (ES): 5MW / 10MWh

Marlborough (NG): TBD

Great Barrington (NG): TBD

Interconnection of Distribution Generation – 19-55

- DPU 19-55 facilitates interconnection of DG projects through tariff revisions and collaborative stakeholder processes to address evolving distribution system needs such as ESS interconnections, conducting distribution system engineering studies and developing upgrades for groups of DG projects, and creating publicly accessible online maps showing hosting capacity on distribution system
- In 2022, the Department issued an Order directing the DG and Clean Energy Ombudsperson to facilitate establishment of an Energy Storage Interconnection Review Group ("ESIRG"). The ESIRG was established in April 2022 and continues to meet regularly.
- Department order issued on June 6th directing the DG and Clean Energy Ombudsperson to facilitate establishment of an Interconnection Implementation Review Group ("IIRG")

Break

Please be ready to start again in 10 minutes

After the break…

- *Draft ESMP Outline Review & Discussion*
- *Close and Next Steps*

Topic 2: Draft ESMP Outline

- Draft ESMP outline sent by MA-GMAC to GMAC members and posted online to the GMAC website on **June 2nd**.
- Received and posted on the GMAC website 4 written comments from Barr Foundation, Acadia Center, Nexamp, and Coalition for Community Solar Access.
- Will share the outline on screen, let the EDCs introduce the outline, and then open for discussion.

Close and Next Steps

- Next Executive Committee Meeting: June 30, 2023, 2:00 – 3:30 PM
- Next GMAC Meeting: July 13, 2023 from 1-4 PM.
- Tentative topics for next meeting
  - Council Updates and Business
    - May and June meeting minutes
    - June Executive Committee Meeting update and minutes
  - Substantive
    - Topic presentations on (1) stakeholder engagement and (2) equity.
    - Council discussion