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

DOER
Massachusetts Department of Energy Resources

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENERGY RESOURCES

Grid Modernization Advisory Council
Update for the EVICC

June 29, 2023

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Massachusetts Department of Energy Resources

Refresher on GMAC and ESMPs

1. Grid Modernization Advisory Council (GMAC)

- 18-person council, comprised of representatives from different areas
- Will review and provide recommendations on electric distribution company electric-sector modernization plans
- GMAC to encourage:
  - Least-cost investments in the distribution system,
  - Alternatives to investments or financing investments that will help achieve GHG emissions limits,
  - Transparency and stakeholder engagement in the grid planning process.

2. Electric-sector modernization plans (ESMPs)

- Electric distribution company ESMPs must:
  - Improve grid reliability, communications, and resilience; enable increased, timely adoption of renewable energy and DERs
  - Promote energy storage and electrification technologies for decarbonization
  - Prepare for climate-driven impacts on T&D systems
  - Accommodate transportation and building electrification, and other new loads
  - Minimize or mitigate impacts on ratepayers
- Will also include a 5-year and 10-year forecast, and a demand assessment through 2050.

Learn more on the DOER GMAC website: https://www.mass.gov/info-details/grid-modernization-advisory-council-gmac

GMAC & ESMP Timeline

GMAC activity
Statutory requirements
Reporting requirements

2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028

2022 Climate Law
Grid Modernization Advisory Council (GMAC) established

GMAC meetings on a monthly basis

GMAC meeting cadence to be determined

GMAC meetings on a monthly basis

Now – 9/1/23
Electric distribution companies (EDCs) conduct technical conferences and 2 stakeholder meetings

9/01/2023:
EDCs submit ESMPs to GMAC

11/20/2023:
GMAC provides feedback on ESMPs to EDCs (80 days to review)

1/29/2024
- EDCs finalize ESMPs and file with the DPU
- EDCs respond to GMAC comments

8/29/2024:
Within 7 months of filing, DPU issues an Order approving, modifying, or rejecting ESMPs

ESMP Phase I

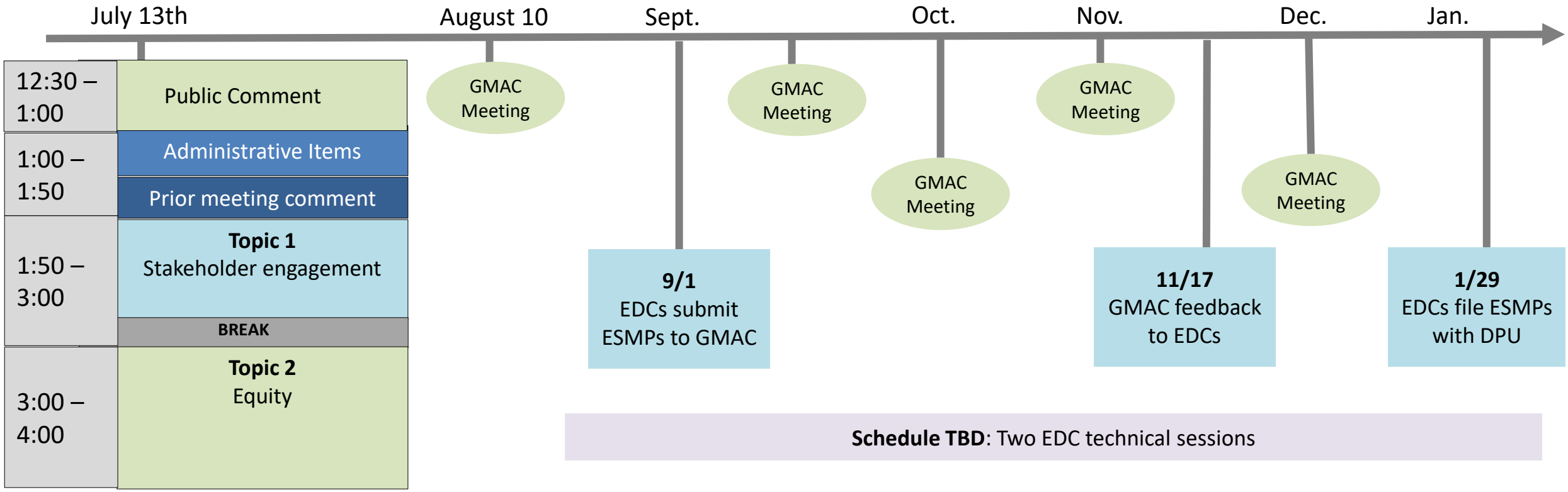
Every 5 years
EDCs consult w/GMAC and file an updated ESMP with DPU.

Late 2028:
EDCs submit second ESMP to GMAC for review

Reporting: EDCs submit 2 reports per year to DPU and Massachusetts Joint Committee on Telecommunications, Utilities and Energy on deployment of approved investments in accordance with any performance metrics

X: 1st report	X: 1st report	X: 1st report
X: 2nd report	X: 2nd report	X: 2nd report

Upcoming GMAC Schedule



- EDCs submitted a joint proposed outline for the ESMPs on June 1, 2023. (Posted on GMAC website)
- Accepting public comment on this, and any other topics related to the GMAC and ESMPs, during July 13th meeting (12:30 – 1) and August 10th meeting (12-1). Message MA-GMAC@mass.gov at least 24 hours in advance of meeting you wish to comment during to reserve a slot.

Key items for EVICC awareness

Multiple sections of the draft ESMP outline are directly relevant to the EVICC

4.0 Current State of the Distribution System

- 4.1 Planning sub-regions
- 4.2 Sub-region 1
  - 4.2.1 Customer demographics
  - 4.2.2 Economic development
  - 4.2.3 Electrification growth
  - 4.2.4 DER adoption
  - 4.2.5 Capacity deficiency
  - 4.2.6 Aging infrastructure
  - 4.2.7 Reliability and resilience
  - 4.2.8 Siting and permitting
- 4.3 Sub-region N (as above)
- 4.4 Technology platforms that we have in place today

5.0 5- and 10-Year Electric Demand Forecast

- 5.1 5- and 10-year electric demand forecast at the jurisdiction level
- 5.2 Sub-region 1
  - 5.2.1 Demand – summer and winter
  - 5.2.2 Weather normalized econometric forecast
  - 5.2.3 Large load (step/spot load)
  - 5.2.4 Energy efficiency
  - 5.2.5 Solar PV growth
  - 5.2.6 Electric vehicles
  - 5.2.7 Heat Electrification
- 5.3 Sub-region N (as above)

Key items for EVICC awareness

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8.0 2035 - 2050 Policy Drivers: Electric Demand Assessment

- 8.1 Buildings: Heating electrification and energy efficiency assumptions and forecasts
  - 8.1.1 Technology assumptions
  - 8.1.2 Adoption propensity assumptions
  - 8.1.3 Building code assumptions
  - 8.1.4 Demand response scenarios – impacts on heating demand
- 8.2 Transport: Electric vehicle assumptions and forecasts
  - 8.2.1 Technology assumptions
  - 8.2.2 Adoption propensity assumptions
  - 8.2.3 Mileage, and time of day assumptions
  - 8.2.4 Managed charging scenarios – impacts on EV demand
- 8.3 DER: PV/ESS – State incentive driven assumptions and forecasts
  - 8.3.1 Technology assumptions
  - 8.3.2 Adoption propensity assumptions
  - 8.3.3 Time of day assumptions
- 8.4 Offshore wind forecasts (procurement mandates, Generator Interconnection Agreemen status, Points of Interconnections)

9.0 2035 - 2050 solution set – Building a decarbonized future

- 9.1 Behind the meter incentive design scenarios (impact on electrification demand)
  - 9.1.1 Buildings: Winter demand response scenarios and associated preliminary incentive designs
  - 9.1.2 Transport: Electric vehicle charging demand management scenarios and associated preliminary incentive designs (discussion of both $/kW incentives to attract participation and ongoing c/kWh incentives to subsidize O&M especially in targeted EJ communities)
  - 9.1.3 Other load management response scenarios and associated preliminary incentive designs
  - 9.1.4 Battery storage charge management and associated preliminary incentive designs
- 9.2 Aggregate substation needs
- 9.3 Non-wires alternatives – impact on substation deferral
- 9.4 Decarbonized gas solutions – Geothermal, Hydrogen, Renewable Natural Gas (linked to ESMP and heat pump deployment plans)
- 9.5 System optimization – impacts on electrification demand