GWSA Implementation Advisory Committee (IAC) Meeting

April 30, 2025, 10:30 AM – 12:00 PM

Virtual Meeting on Zoom

Meeting Minutes – *Draft*

Welcome, approving the 1/23/25 IAC meeting minutes, agenda overview

Undersecretary Antos called the meeting together at 10:33am with quorum reached.

Kurt Roth stated that more detailed notes of IAC member feedback should be shared in the future. Undersecretary Antos confirmed that this would be done. Meeting minutes were approved by majority.

Forest Carbon Study

Dunbar Carpenter, Manager of Land Carbon Science and Analysis, lead a presentation about the Study Overview & Key Findings of the Forest Carbon Study: The Impact of Alternative Land-use Scenarios on Terrestrial Carbon Storage and Sequestration in MA.

Study Goal: To better quantify future carbon sequestration and storage potential of Massachusetts forests and NWL, including trends, risks, and opportunities, in the context other land use objectives.

Results – Future Forest Carbon Storage Trajectories

- Massachusetts forests will continue accumulating carbon through 2100.
- The state's carbon storage trajectory will be driven primarily by net forest growth, and secondarily by major hurricanes which can cause temporary losses of stored carbon storage (i.e., net emissions).
- Alternative approaches to forest management can also influence future carbon storage, but these effects are smaller and more context-dependent; land conversion (not shown) has a similarly sized effect.

Results – Future Forest Carbon Sequestration Rates

- In low disturbance scenarios, the net carbon sequestration rates is expected to remain relatively steady through mid-century, then decline later in the century due to declining growth, increased mortality, and disturbance emissions.
- In high disturbance scenarios, the net carbon sequestration rate becomes much more variable, including periods of net emissions following major hurricanes, though remains stronger later in the century.
- Other factors – management/harvesting, reforestation/tree-planting, NWL/forest loss (not shown) – have more modest influence on carbon sequestration rates.

Results – Emissions from Development-Driven NWL Conversion

- Building Development: Emissions could be 0.5-0.9 MMTCO2e/yr., but most of this could be avoided with more compact development patterns (<0.2 MMTCO2e/yr.)
- Solar Development: Emissions could be 0.3-0.5 MMTCO2e/yr., but most of this could also be largely avoided with improved siting and more efficient land use (~0.1 MMTCO2e/yr.)

Overview of Key Findings

- Conversion of NWL to developed uses could increase emissions moderately in the coming decades, but most of these emissions could be avoided with less land-consumptive development patterns, while still meeting clean energy and building development needs.
- Different harvesting levels and approaches to forest management do not generally lead to large differences in carbon sequestration in Massachusetts relative to other factors.
- Need to consider annual carbon sequestration rates v. long-term cumulative carbon storage, out-of-state leakage, and non-carbon ecosystem services.
- Active forest management can improve indicators of forest resilience and climate adaptability, including landscape-scale tree species and structural diversity and regeneration of important tree species.
- Other forest and land use strategies have more limited carbon sequestration potential:
- Reforestation and tree planting.
- Improved utilization of wood generated by harvesting, disturbances, and land clearing in durable products.
- Massachusetts' forests are expected to continue serving as a long-term net sink of atmospheric carbon over the course of the 21st Century, but this forest carbon sink is vulnerable to natural and human disturbances.
- Net carbon sequestration rate could remain relatively steady through mid-century (best case).
- Hurricanes pose the largest risk to forest carbon, leading to high variability in the sequestration rate and potential for temporary weakening or reversal the state's forests carbon sink.

Hong-Hanh Chu, Policy Advisor for Carbon Sequestration & Storage discussed key takeaways and next steps.

Key Take-Aways: Land Use

- Minimizing deforestation is critical for "holding the line" on forest carbon sequestration. Continued permanent forest loss will make achievement of net zero emissions in 2050 even harder.
- Utilizing cleared trees in durable wood products can help reduce direct emissions from land clearing and provide a local source of wood products.
- The study demonstrates the physical potential to meet the land use needs of solar and building development while minimizing impacts to forest carbon and other ecosystem services. Realizing this potential will require purposeful and strategic planning, policies, permitting, and incentives.

Key Take-Aways: Forest Management

- Climate-oriented silvicultural practices and improved wood utilization can help mitigate the short-term carbon emissions from timber harvest while providing a local source of wood products.
- Different approaches to forest management are unlikely to significantly increase the level of carbon sequestration by MA forests.
- Best to manage forests holistically for long term health, biodiversity, and climate resilience.
    - The study's landscape-level outputs/results should not dictate site-specific management or conservation decisions.

Key Take-Aways: Forest Management

- The findings generally support the recommendations from the Forests as Climate Solutions Initiative, including:

- Expanding forest reserves (passive management) on some lands protects existing carbon storage;
- Climate-oriented active forest management can help balance carbon sequestration, climate resilience, biodiversity, forest health, and other management objectives;
- Keeping forested land as forests is important for maintaining carbon storage and sequestration, among other benefits.

Key Take-Aways: Reforestation & Tree Planting

- Reforestation and tree planting are long term investments, providing more carbon storage and sequestration (and other benefits) overtime as the planted trees grow.
- Important to scale up reforestation and tree planting now to reap their benefits sooner. Also important is appropriate stewardship to ensure vigor and climate resilience as the planted trees age.
- However, additional strategies are needed to complement reforestation and tree planting as they have limited potential due to land availability to significantly increase the statewide carbon sequestration level.

Key Take-Aways: Supplemental Strategies

- Forests play an important role in balancing residual GHG emissions in 2050, but an increase in the statewide level of forest carbon sequestration is unlikely due to natural forest processes (i.e. growth and mortality), competing land use, substantial hurricane risks, and other ecological disturbances.
- Therefore, a broad range of strategies is needed to offset residual emissions and achieve statewide net zero emissions in 2050:
    1. In-state natural and working lands (NWL) and hybrid carbon dioxide removal (e.g. biomass burial, coastal waters, biochar)
    2. In-state engineered carbon dioxide removal options
    3. Out-of-state carbon dioxide removal (NWL-based, marine-based, engineered, hybrid)
    4. Further GHG emissions reductions, including waste-based advanced biofuels and other low/zero carbon fuels for hard to decarbonize sectors

EEA's Next Steps

- Advance Massachusetts' Integrated Land Use Strategy (previously Holistic Land Use Strategy/Plan), in coordination with other Secretariats, to prioritize optimal locations for clean energy infrastructure, housing, economic development and land conservation.
    - Recent progress: Project management team convened, workplan completed and shared with secretariats; energy infrastructure site suitability methodology drafted; land use planner hired; RFP for consultant support.
- Seek additional and consistent funding to:
    - Scale up reforestation and tree planting and stewardship, focusing on riparian and urban areas for multiple benefits.
    - Continue enhanced land conservation through implementation of Forests As Climate Solutions Initiative, Resilient Lands Initiative, and Executive Order 618 on Biodiversity Conservation.
    - Continue incentives for climate-oriented forest management and improved wood utilization through implementation of Forests As Climate Solutions Initiative.

- Continue to explore additional NWL opportunities, carbon dioxide removal technologies, and potentially out-of-state carbon sequestration to achieve Net Zero in 2050.
- Revisit existing NWL-related goals and consider developing new goals for the next Clean Energy and Climate Plan.

IAC Comments on the Forest Carbon Study presentation

- Steve Long thanked the presenters for their work and suggested creating a "natural and working lands playbook" for communities and non-profit organizations to help them take action and become eligible for funding, similar to the Green Communities and MVP programs.
- Noelle Eckley Selin from MIT complimented the report but raised a "scientific flag" regarding the use of "net zero" and accounting for passive CO2 uptake. She emphasized the importance of distinguishing passive uptake from more permanent anthropogenic removals.
- Michelle Manion from Mass Audubon highlighted the report's importance, particularly the analysis of future scenarios and disturbances. She emphasized the need to figure out how to do development with the "lightest footprint" possible to reduce emissions and protect forests. She also commented on the relative cost-effectiveness of natural carbon removal compared to technologies like direct air capture.

M/HD Vehicle Electrification and EVICC Updates lead by Mark Scribner, Policy Advisor for Transportation.

Summary: Massachusetts Programs Supporting M/HD Electrification

Massachusetts offers rebates, fleet planning, and infrastructure support to advance medium- and heavy-duty vehicle electrification across sectors.

- Mass Fleet Advisor: Free fleet electrification planning assistance focused on MDHD fleets
- MOR-EV Trucks: $7.5k to $90k rebates for Class 2b through 8 electric trucks
- MassEVIP Fleets: Grants for public fleet EV acquisition and fleet EV charging stations
- Utility EV Programs: Support for EV charging from Eversource, National Grid, some MLPs
- MassCEC/EVICC: $38M to advance EV charging solutions including MDHD infrastructure
- LBE: Fleet EVSE Deployment Grant for state fleet EV charging infrastructure
- Advanced Clean Trucks Rule: DEP grants relief for manufacturers unable to meet MY 25 & 26 sales requirements. Additional information available: Massachusetts Announces Flexibilities for Clean Trucks Requirements | Mass.gov

M/HD Vehicle Electrification in MA "by the numbers"

Vehicles

- M/HD Class 3-8 EVs (BEV + PHEV):* 391
- MOR-EV Trucks rebates issued:**
    - Medium- and heavy-duty BEV: 30
    - BEV Pick Up Trucks/Van (Class 2B): 827

*as of 4/1/25
**as of 1/1/25

First EVICC Assessment

- Key takeaways from the first EVICC Assessment included:
    - Additional EV charging infrastructure is needed to meet the Commonwealth's 2030 climate goals
    - Customer charging experience needs improvement
    - Massachusetts should prioritize charger access for "garage orphans," renters, and rural communities
    - A lack of grid capacity poses challenges to deploying the needed amount of EV chargers
    - The State should better promote its EV charger incentive programs and availability of EV charging

- Actions EVICC or EVICC members have taken to address these takeaway are included in the Appendix
- The Second EVICC Assessment is due on August 11, 2025

Second Assessment Objectives

- The Second Assessment will provide a clear roadmap for how Massachusetts plans to deploy the necessary EV charging infrastructure to meet the state's climate goals and other policy objectives through 2035
- The Second Assessment will build on the work of the First Assessment to provide more granular analysis and recommendations, as time, resources, and data availability allow
- The Assessment will provide this roadmap by clearly laying out:
    - The current state of EV charging in Massachusetts;
    - The likely endpoint to meet the Commonwealth's policy goals; and,
    - EVICC's recommendations on how to get from here to the desired endpoint.

- Each recommendation will identify:
    - Which state agency or agencies will support / lead implementation; and,
    - The role of local/regional governments, private companies, and electric utilities.
- The Assessment will also highlight:
    - The interrelation with the state's Clean Energy and Climate Plan (CECP) for 2025 and 2030; and,
    - The role of EVICC in coordinating recommendation implementation.

Overview of Second Assessment Outline

1. Executive Summary: Clearly conveys plan to meet 2030/2035 EV charger needs and EVICC's recommendations
2. Purpose and Context: EVICC background; policy background; and development of Second Assessment
3. Current EV Charging Programs and Initiatives
4. EV Charger Deployment
5. Electric Grid Impacts and Managed Charging
6. Consumer Charging Experience
7. EV Charging Technology and Business Model Innovation
8. Summary/Conclusion

9. Appendices
    - EV charger needs projections methodology
    - One-page summary of existing state EV programs by program type
    - Educational materials for EV charging customers and EV charger site hosts
    - EJ Community Siting Guide
    - Summary status of recommendations from First Assessment
    - Information on non-infrastructure EV programs and initiatives (e.g., MOR-EV, Accelerating Clean Transportation (ACT) School Bus, state employee domicile EV policy, etc.)

EV Charger Deployment Overview

- Evaluation of the type and location of EV chargers needed to meet state's goals through 2035
    - Focus on multi-family dwellings with on-street parking, EJ communities, and medium duty/heavy-duty EVs
    - Compare the pace of EV charger deployment since last assessment to state's goals
- Location and type of EV charger needs are informed by:
    - Projected traffic patterns and volumes
    - Demographic data (population, employment, etc.)
    - Vehicle sales and electrification forecasts
    - Housing characteristics (single-family homes vs. multi-family homes with on-street parking)
    - Existing chargers and EV registrations
    - Locations of food amenities, stores, and restrooms for public chargers
    - Trucking depots and rest stops
- Additional information on the methodology is include in the Appendix
- The following slides show preliminary results for Public EV Charging (DCFC & L2)
- Additional preliminary results details are available on the EVICC website.

IAC Comments on the Transportation Updates

- **Sarah Simon** of E2, co-chair of the Transportation Working Group, emphasized the need to focus on electrifying transit, which includes medium and heavy-duty vehicles, and to consider the charging network from the perspective of reducing the number of personal cars.
- **Kate Dineen** of A Better City, also co-chair of the Transportation Working Group, thanked Mark Scribner for his presentation and noted that the group is looking forward to tracking the progress of transportation items and providing input on the upcoming CECP.

Informing the 2035 CECP Process

Mellisa Mittelman discussed how the EEA has been developing a work plan in 2025 for the 2035 Clean Energy and Climate Plan.

- Goals and Visions
- Timeline and deliverable
- Role of IAC and other stakeholders
- Public Engagement and EJ

- Policy development
- Modeling
- Integrating Planning Efforts

IAC Comments on the 2035 CECP Process

- Caitlin Peale Sloan of CLF emphasized the importance in the previous process of engaging work groups to surface priorities and provide feedback.
- Sarah Simon asked about the timeline for drafts and milestones for the new CECP. Melissa Mittelman responded that the goal is to have an initial outline by the summer.
- Steve Long suggested including a discussion on how to fund the climate work, given the changing federal landscape and a focus on affordability. He also recommended that the Climate Justice Working Group align with each sector group.
- Michelle Manion, Mass Audubon, recommended that the report capture the range of uncertainty across all sectoral reduction strategies, similar to how the IPCC presents its findings. This would help with contingency planning. She also suggested a deeper understanding of the sensitivity of technology uptake to incentives to better inform financing needs.
- Kurt Roth, Fraunhofer, highlighted the need to focus on sectors that are tougher to decarbonize, such as buildings and industry. He reinforced the importance of cost but also urged looking at ways to reduce the cost of implementation of new technologies, not just relying on subsidies.
- Dave McMahon touched on insulating Massachusetts' efforts from federal variability and considering regional approaches. He also brought up resilience in urban communities, particularly addressing heat islands and asthma.
- Amy Boyd Rabin, ELM, echoed the need to consider costs but added a caution to also include the costs of inaction and avoided costs to provide perspective.
- Jeremy Koo, MAPC, emphasized the need for the 2035 CECP to be grounded in near-term priorities and to account for the pace of progress. He suggested including scenarios based on different starting points to ensure the state stays on track.

IAC Work Group Updates

Katherine Antos expressed appreciation for the enthusiasm and engagement of all the work groups. She emphasized the importance of their input for the next CECP and other near-term initiatives.

- Natural and Working Lands
    - The group held a pre-briefing on the forest carbon study. Members were encouraged to provide comments directly to EEA.
- Buildings
    - The group had a meeting in March to learn about EEA's work on a new building sector model.
- Transportation
    - The group met in February and thanked Mark Scribner for his presentation on transportation items. The group will meet again to continue discussing the progress and to help shape the upcoming Clean Energy and Climate Plan (CECP).
- Electricity

    - The group had a productive meeting in late March, receiving an update on the state's comprehensive interconnection reform approach. Members are currently focused on the siting reform feedback.
- Climate Justice
    - The climate justice work group co-chairs have resigned due to availability and a geographical move. We are working to find a new chair for the climate justice work group. If you have any suggestions, please get in touch with Melissa Mittleman.

Public Comments

- Doug Pope questioned the land use study's portrayal of solar energy, arguing that the emissions from cutting down trees to build solar farms should not be seen as an outright penalty. He stated that the significant amount of avoided emissions from using solar energy to replace fossil fuels far outweighs the emissions from initial tree clearing. In response, Katherine Antos stated that the study aims to meet energy goals with a smaller footprint and that the focus is on finding ways to support clean energy in smaller areas.
- Tina thanked the group for its transparency and asked if they would provide input for the state's bond bill. Katherine Antos confirmed that feedback from the IAC and other stakeholders is being taken into account for setting legislative priorities for the bond bill.
- Seth Gadbois of the Conservation Law Foundation urged the group to re-examine the economic assumptions in a previous transportation report, specifically the idea that an increase in vehicle miles traveled (VMT) indicates a growing economy. He emphasized that revisiting this assumption is crucial for developing effective VMT reduction strategies in the next Clean Energy and Climate Plan (CECP).

Undersecretary Antos asked for a motion to adjourn. Meeting adjourned at 12:01PM.

Documents or exhibits used at the meeting (posted online afterwards)

1. Meeting Agenda
2. Meeting Minutes of January 2025
3. Meeting Slides

Attendance 4/30/2025

IAC Member/Delegates in attendance:

Organization	**Name**
A Better City (ABC)	Kate Dineen
Boston University	Cutler Cleveland
City of Boston	Elizabeth Jameson
Conservation Law Foundation (CLF)	Caitlin Peale Sloan
Dismas House of Massachusetts	Dave McMahon
Environmental Entrepreneurs (E2)	Sarah Simon

Environmental League of Massachusetts (ELM)	Amy Boyd-Rabin
Eversource	Tracy Gionfriddo
Fraunhofer USA	Kurt Roth
Mass Audubon	Michelle Manion
Massachusetts Institute of Technology (MIT)	Noelle Eckley Selin
Massachusetts Municipal Wholesale Electric Company (MMWEC)	Jason Viadero
Metropolitan Area Planning Council (MAPC)	Jeremy Koo
National Grid	Kevin O'Shea
The Alliance for Climate Transition	Tim Snyder
The Nature Conservancy (TNC)	Steve Long
Union of Concerned Scientists (UCS)	Paula García

Others in Attendance

Allan Fierce
Bob Wilber - Comm. of MA DCS
C Thompson
Cathy Kristofferson
Celeste Venolia (she/her), Sierra Club MA
Charlie Myers
Chris Egan
CHRISTINE KIRBY - MassDEP
Daniel Engelberg, EEA
Daniel.Koerner
Doug Pope
Dunbar Carpenter, MA EEA
EEA Energy
Elizabeth Jameson | City of Boston (she/her)
Eric Friedman
Fran Cummings
Gideon Katsh
Hanh Chu
Ian Finlayson
Jane Winn (BEAT) any pronouns
Jennifer Applebaum, MassCEC
Jenny.Goldberg - DOER
Josh Ryor, EEA
Julia Gold
Katherine Antos, EEA (she/her)
Lucia Dolan

Mark R. Scribner
Melissa Mittelman
Michael Greco
MikeDuclos
Oleander Stone
Paula García, UCS
Seth Gadbois (Conservation Law Foundation) (they/he)
Sharon Weber
Sherry Morgan, Deerfield
Shevie Brown (DOER)
Sophia Vitello, DOER (she/her)
Tina Grosowsky
Tony beattie
Van Du, MAPC
Walter’s iPhone
Will Space