

# Grid Modernization Advisory Council (GMAC)

## MEETING MINUTES

Thursday, October 12, 2023, 1–4 p.m.

Hybrid meeting

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**Councilors present:** Kelly Caiazzo, Sarah Bresolin Silver, Marybeth Campbell (virtual), Larry Chretien, Kathryn Cox-Arslan (virtual), Jeremy Koo (designee for Julie Curti; virtual), Commissioner Elizabeth Mahony, Amy McGuire, Kyle Murray, Sarah Cullinan, JS Rancourt (virtual), Jonathan Stout, Andy Sun (virtual), Alex Worsley (virtual), Kathryn Wright (virtual)

**Non-voting councilors:** Carol Sedewitz (National Grid), Digaunto Chatterjee (Eversource), Kevin Sprague (Unitil; virtual)

**Councilors absent:** —

**DOER staff present:** Aurora Edington, Julia Fox, Rachel Evans (designee for Sarah McDaniel), Austin Dawson

**Consultants present:** Paul Alvarez (virtual), Jennifer Haugh, Chelsea Mattioda, Dennis Stephens (virtual), Tim Woolf

**Additional presenters:** Erin Engstrom (Eversource)

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### 1. Call to order

**Commissioner Elizabeth Mahony (DOER):** Commissioner Elizabeth Mahony, as Chair, called the meeting to order at 1:02 p.m.

### 2. Welcome, Roll Call, Agenda

**Commissioner Elizabeth Mahony (DOER):** Commissioner Elizabeth Mahony welcomed all participants to the GMAC meeting. The Commissioner took roll call for voting and non-voting members.

No additions or changes to the agenda were suggested. The Commissioner walked through the proposed agenda (slide 2).

Commissioner Elizabeth Mahony asked if there were changes to the September 28, 2023, GMAC meeting minutes; none were suggested. Councilor Kyle Murray moved to approve the minutes of September 28, 2023. Councilor Sarah Bresolin Silver seconded. The motion carried unanimously.

Commissioner Elizabeth Mahony asked if there were changes to the September 29, 2023, Executive Committee meeting minutes; none were suggested. Councilor Sarah Bresolin Silver moved to approve the Executive Committee minutes of September 29, 2023. Kyle Councilor Kyle Murray seconded. The motion carried unanimously.

### **3. ESMP Review Period Reminders**

Commissioner Elizabeth Mahony went through several slides:

- Slide 4: There is a joint Clean Energy Transmission Working Group (CETWG) / GMAC meeting on October 13, 2023. Two listening sessions are coming up via Zoom: October 30 and November 1. There are 93 registrants so far.
- Slides 5–6: Further details on upcoming meetings and events
- Slide 7: ESMP recommendation spreadsheets have been augmented slightly to include new columns. Recommendations for Sections 6, 10, and 12 were aggregated and sent out for this meeting. Commissioner Elizabeth Mahony asked how people are feeling about the updates from this round; there were no suggestions or changes.
- Slide 8: Upcoming recommendations sheet deadlines
- Slide 9: Other updates include the metrics from the EDCs. The first set is about stakeholder engagement / EDCs, which were shared with the Equity Working Group on October 5. The rest of the EDCs' proposed metrics will be shared later in October. The ExCom discussed whether to include responses and discussion from the utilities during GMAC conversations and concluded that those are valuable.
- Slide 10: The utilities will be holding four-hour, remote, facilitated technical sessions on November 15 and 28. Commissioner Mahony expressed that the sessions are very late in this process, and there was a lot of consideration on how to build this out. We will come back in December to talk about what was heard or shared. The GMAC will have an opportunity to react to what was shared in December where there will be a process for reflection and providing additional feedback for the utilities.

***Councilor Larry Chretien, Green Energy Consumers Alliance, representing low- and middle-income residential consumers:*** Chretien said he hoped those dates have been locked in and promoted, and that the GMAC would soon hear the outcomes in case that changes our opinions on anything.

***Commissioner Elizabeth Mahony:*** Commissioner Mahony confirmed that the DOER will make sure to publicize these dates at the public listening sessions and put the information on the website.

*Carol Sedewitz, National Grid, and Erin Engstrom, Eversource*, shared slides 11–14 with details on the technical sessions.

Engstrom reported that she'd shared these slides with the Equity Working Group and was hoping to get feedback on what has been proposed. The invitation list for the 30 seats was expanded beyond what was required to ensure there was as broad of representation as possible. The intention is to make the process transparent. The agenda is still in development but will be shared with the GMAC when it's available. The EDCs may be looking to the DOER on how to handle alignment with the public listening sessions. All feedback will be written down, put into a matrix, and offered a response, which will be shared with the GMAC. Slide 14 shows the proposed list of 30 representative panelists from a range of industries. A list of 225 municipalities is also included to participate indirectly.

***Councilor Kathryn Cox-Arslan, New Leaf Energy, representing the distributed generation renewable energy industry:*** Regarding slide 14, she understands the need to limit panelists to 30, but is concerned about representation from trades and DG/DER developer lists. We need to think about the diversity within that community to be inclusive.

***Erin Engstrom:*** Engstrom appreciates the feedback.

***Councilor Kathryn Wright, Barr Foundation, representing the environmental justice community:*** Wright said she suspects that DG/DER developers may want a level of technical detail that may not be what the other reps would want. Will there be breakout sessions to capture specific interests? She would also like to see clarity on the expectations of different groups.

***Erin Engstrom:*** This came up in the Equity Working Group meeting too. We took that back to the facilitators, who heard that and will format the agenda accordingly to ensure that folks remain engaged and that the way the topics are applicable. The format and agenda are being finalized, which we'll share. The folks on the right side of the slide are organizations that should know about the meetings and are encouraged to provide written feedback. We recognize time is limited and not everyone has four hours for each these meetings.

***Councilor Alex Worsley, Enel North America, representing the transmission-scale renewable energy industry:*** This list obviously took a lot of effort and thought, and it's pretty well balanced right now with participants and having a meaningful and engaging discussion. One missing group is demand response and load management providers. There are a lot of end users but not a lot of service providers. Especially when discussing technologies on the system in the future, that voice would be helpful to be represented.

***Councilor Amy McGuire, Highland Electric Fleets, representing the electric vehicle industry:*** One missing piece she saw from the EV side is we have Tesla and MassDOT for transportation, two very distinct entities but on opposite ends of the spectrum with light-duty and mass transit. The middle realm of medium- and heavy-duty fleets doesn't seem to be represented, which would be a very valuable perspective, as it's part of a prominent electrification effort. It would be useful to try to incorporate that perspective as well.

#### **4. Continued Discussion of Day 2**

**Tim Woolf, Synapse**, presented slides 17 through 19 on Section 6: Five- and Ten-Year Solutions.

**Councilor Larry Chretien**: Chretien asked for clarification of the origin of the information, which comes from written feedback from the GMAC spreadsheets, consultants' recommendations, and summary takeaways from GMAC meetings.

**Tim Woolf**: The consultants agree with all of the GMAC recommendations. The general theme is providing more transparency, providing comparisons, identifying timelines, mapping solutions more closely to the forecast, and integrating how planning will evolve based on climate impacts. This is more about offering more detail and connecting the dots.

**Councilor Larry Chretien**: How and when we would reconcile these recommendations? Even with checkmarks on the GMAC, it doesn't mean there is unity on those recommendations either.

**Aurora Edington, DOER staff member**: There's a second iteration of recommendations coming up in November where we'll figure out a way to find consensus on them. If there is any disagreement, we'll make those known and potentially discard them and figure out a way to prioritize other recommendations.

Tim Woolf shared a summary of recommendations for Section 10: Reliable and Resilient Distribution System on slides 21 and 22.

**Councilor Sarah Bresolin Silver**: How are you choosing to represent the GMAC recommendations?

**Tim Woolf**: These are a summary of recommendations, started by Chelsea Mattioda (Synapse) and completed by Daniela Miranda (GreenerU).

Tim Woolf shared a summary of recommendations for Section 12: Workforce, Economic, and Health Benefits. Similar themes arose about specificity and detail.

**Councilor Sarah Bresolin Silver**: On slide 22, how did recommendations come up between GMAC vs. consultants?

**Tim Woolf and Jennifer Haugh, GreenerU**: These are areas of alignment.

**Digaunto Chatterjee, Eversource**: We have not done a full-fledged transmission analysis, which will require a year to perform. We understood that that scope was not within the GMAC.

**Commissioner Elizabeth Mahony**: We can understand the desire to bring up transmission because there is mention of CIPs in Eversource's ESMP, a change that triggers these questions.

**Tim Woolf**: There is a big overlap.

**Councilor Sarah Cullinan, Massachusetts Clean Energy Center, representing Massachusetts Clean Energy Center**: It's not black and white. The GMAC is concerned with the distribution system, and that will invariably impact the transmission system. There will be impacts on rate payers. The specific costs, impacts, and investments are outside of this scope, but the interactive

effects are inside of the scope. There is the separate CETWG that we're meeting with tomorrow, but there should still be a concern about where those are meeting in the middle. One two-hour meeting will not resolve the nexus between the two, so there needs to be something in the ESMPs that speaks to the level of transmission impact of the investments. There are alternatives being scoped on the distribution system that will cause impacts on the transmission system.

**Digaunto Chatterjee:** For instance, when we go from 6 GW to 7 GW system in demand in the ten-year plan, a big portion of that is in metro Boston, so we will hit transmission transfer capabilities into and out of Boston. That macro level we can speak to as to how much that deficit will be; what that translates into one or two major transmission paths, we can speak to. But where I get worried is the transmission design to serve the Hyde Park station or East Cambridge; that will take years of analysis.

**Councilor Amy McGuire:** I wasn't expecting to have a detailed transmission-level analysis, but I do agree with Councilor Bresolin Silver that not only is there an intersection; it's important to understand that the 7 GW might be the threshold, and there might be even more urgency to figure out the distribution level to stay below that number. That might be the step-level increase in cost that might be upper-bound. There might be more distributed resources, direct-to-grid, more non-wires alternatives that we could push for and not have to deal with transmission investments. We would need to understand the thresholds at the very least to understand what to aim for and still meet our goals.

**Councilor Sarah Bresolin Silver:** Bresolin Silver likewise wasn't expecting a full analysis, but agrees that having some sense of impact would be helpful. This is an issue that the CETWG should be looking at, so to the extent that we can discuss that with them tomorrow, she would encourage that.

**Carol Sedewitz:** Sedewitz supports Chatterjee, and also wants to get clarity on what is expected, because that will be something that can come out of the comments. In the EDCs' view, transmission wasn't included in the scope of the ESMPs. She recognizes that there was mention of CIPs to facilitate substations being built, but the sense of where the levels and impacts to where Councilor McGuire was speaking to, that's challenging to do in two months. That's something they will need support from ISO-NE to help with.

**Commissioner Elizabeth Mahony:** Mahony will flag that there is language in the GMAC statute that points to considering transmission and all this. We are reacting to a specific recommendation, but we are going to have to wrestle with that. When we talk more on October 26, we can pick this up again. There's a difference between what this recommendation is or where this discussion is going and making sure that we check the boxes in terms of what has been set out for us by the legislature. Sen. Mike Barrett is watching today and remembering that transmission was included. It's something for us to think about and how we can address it given the timeline and complications, but it's good that it came up now so we can take the time to figure it out.

**Carol Sedewitz:** The EDCs can speak to it, but she thinks doing a true study is a big deal.

*Digaunto Chatterjee:* We have been working within Eversource to come up with a detailed transmission plan to meet the ESMP needs; the timeline of that is likely by the end of the year. Tomorrow we will be making a presentation to highlight how transmission and distribution overlap. The issue is not whether we will have a transmission plan; it's the GMAC timing and what level can we speak to this within the ESMP timeline.

*Councilor Kathryn Cox-Arslan:* Cox-Arslan had a suggestion about spreadsheets and how some items that are appropriate for future ESMP issues could be about what can be done now vs. future iterations.

## **5. Section 8: 2035–2050 Policy Drivers**

Tim Woolf presented slides 25 through 38:

- Slide 25: The term “policy drivers” isn’t as applicable as it could be. This topic is really about long-term forecast on peak demand. Most of the slides and recommendations are about how those assumptions affect the forecast.
- Slide 26: Assumptions are based on “all options” roadmap for 2050. This is a reasonable pathway to choose; it’s benchmark-compliant, least-cost, etc. All EDCs forecast significant growth, much more so than in the past 15 years.
- Slide 28: solar capacity relative to hosting capacity
- Slide 29: impacts of heat pumps on loads with National Grid example
- Slide 30: summary of sensitivities to load forecast
- Slide 31: EV option—Woolf said he’s not sure why there’s such a narrow band of sensitivities.
- Slide 32: Unitil provided a very useful graphic that puts all the pieces together in one place. This bar graph shows the build-up of various load drivers and subtractors.
- Slide 33: scaling from state benchmarks to utilities’ relative sizes
- Slide 34: There is a lack of standardization and transparency, particularly with the Clean Energy and Climate Plans (CECPs), roadmaps, and scenarios. Not clear whether the ESMPs are taking CECPs or using them as benchmarks. It’s not clear how long-term forecasts are tied to investments or how they drive them. Inclusion of sensitivities is helpful, but maybe there’s a bit more to make them more consistent and transparent. A big issue we have is in Section 5 (ten-year forecasts) and in Section 8 (long-term forecasts), but the methodologies are different. Unitil was the most consistent.
- Slide 35: Ideally the 10-year forecast should terminate where the long-term forecast begins; otherwise there is discontinuity that doesn’t make sense. Treatment of uncertainty is inconsistent. Forecasts tend to be bottom-up and based on current grid and customer conditions. If short-term and long-term were better integrated, it would be easier to see the relationship there. Combining Sections 5 and 8 would help.
- Slide 36: comparison of assumptions across EDCs and DERs—this is a comparison of different items that affect load. There are a lot of places where the EDCs rely upon the “all options” pathway, but there are places where they deviate from that. There isn’t consistency across the utilities and it’s not clear why.
  - Woolf clarified that under Unitil where the slide says “sources were not provided,” this is not so; data on current customers were used as their source. For

National Grid under DR, where it says “not provided” is not accurate either; this data is based on existing programs. They didn’t provide the data, but they gave the big picture of where that comes from.

- Regarding PV, there is a lot of analysis on PVs that affects more than just peak demand. Eversource does have a great analysis on this. Unitil offers a locational value analysis for PV. He didn’t see that with National Grid or Eversource.
  - For energy efficiency, there is an assumption of historic trends, but no assumptions about whether they could do more under new grid modernization investment plans.
  - There’s very little on demand response, and this gets a little tricky because one could argue that these particular resources—energy efficiency and demand response—could be seen as a solution, which comes up in Section 10. It’s a gray area as to what will happen anyways vs. what the utilities could further promote. More on that in the section on solutions set.
  - The “Other DERs” row should be ignored; this was a holdover from a previous version.
- Slide 37: There is not a lot of detail about the energy mix/wind, but he’s not sure there needs to be here.
  - Slide 38: Recommendations: there should be better integration between short-term and long-term forecasts. Long-term is important, but not quite as important as the short term. The EDCs should clearly articulate how the long-term forecasts will drive their investments. There could be more robust sensitivity analyses with a bit more thinking about different levels of DER penetration in different ways. There’s not a lot of talk about storage, except that storage is paired with PV, especially ground-mounted. By 2050 or 2035, there’d be a whole lot more storage opportunities—not just by utilities, but driven by market forces, and we didn’t see that here at all.

## **Discussion:**

***Councilor Larry Chretien:*** Chretien supports the idea of standardization by the three EDCs by their forecasting, methodology, how they’re going about assumptions, and how they should be tracking the same way to the CECPs. As the ESMPs go to the DPU, they may want to zig and zag on what they ask of the DPU for approval. When they are going in three different directions to present, it’s incredibly time consuming for GMAC, DOER, and stakeholders to try to understand it on a time crunch. More importantly it will drive up the cost of participation when it gets to the DPU. There are activists who really care about this stuff and they won’t be able to participate in this process. If the utilities could get together and standardize their findings, that would be helpful. We as an agency feel that stakeholder engagement will be meaningless if we are asking activists to read hundreds of pages.

***Commissioner Elizabeth Mahony:*** Mahony agreed, especially coming off of state goals and plans.

***Councilor Kyle Murray, Acadia Center, representing the environmental advocacy community:*** Regarding the back and forth between the roadmap, the Future of Gas report, the CECP, those are very different things—the EDCs are picking and choosing which baselines to use. He would quibble on using the 2080 Future of Gas report; that’s a flawed document, as many stakeholders

have pointed out. We shouldn't be using that to base state policy. Regarding modeling, he appreciated the detail Eversource provided on their modeling; that was great to read. But partially because of trying to dig into that, he had some quibbles about talking about the hybrid heating systems. Eversource lists the four potential fuel sources, which are lumped in together, but those are all very different. Where would hydrogen come from? How much at load growth would we need? Biofuels? Do we use the existing gas system? With lower emissions factored in, is that including leaks in the system, etc.? There is a lot more to be done with energy efficiency and batteries, and he thinks using the business-as-usual approach is not what we're going to be doing over the next 10–20 years.

**Commissioner Elizabeth Mahony:** Ditto on the 2080 Future of Gas report.

**Councilor Amy McGuire:** Regarding transportation, she was hoping to see more sensitivity around load growth and the impact of that. Assuming that all EVs are charging at peak is grossly inaccurate; that's not how it will play out in 2050. We're learning a lot about smart charging and behavior, not only at the fleet level but among residential consumers as well. As people become EV drivers, they become much more aware about all things EV including fueling. She would hope that there can be a little more accuracy about what to expect for the peak impact of EVs by 2050, and in particular, that sensitivity is a very tight high-low window. This is not even talking about bi-directional charging on peak.

**Councilor Sarah Bresolin Silver:** A general comment across all three ESMPs is she can't tell when referring to DERs if that includes batteries, and the assumption is it doesn't. It might be helpful to indicate what DERs are included. Also, one of the ESMPs says that co-located storage is not grid-charging; ENGIE is still bringing projects online that are doing this, so that's not accurate. Would also like to see all three plans discuss how they're forecasting storage, and on Slide 34 with all the different resources to say where the storage is, there is an exceedingly low amount of information about storage and she continues to be flummoxed about the impact of storage on the plan.

**Councilor Sarah Cullinan:** Liked the consultants' recommendation that there be a clear articulation of how the long-term forecasts impact the short-term investments. The way she sees long-term is there's a lot that will change between now and 2035, and there will be iterations on the assumptions that go into that. It's important to understand how the assumptions now will determine what we're doing now to prepare for the long term. It might not be that important what assumptions we're using now as long as they're not very sensitive or off-base because the reality is going to change between now and then.

**Councilor Andy Sun, Massachusetts Institute of Technology, representing engineering expertise in interconnecting clean energy:** Sun echoes previous comments, especially about potential usage of EV charging management and battery system usage in operation. One perspective is the forecast is given with the best effort with the utilities' data and information, but it seems like it's not directly assuming how these resources will be run in the future, whether batteries or EV charging. He also sees that the utilities are doing a lot of modernization of their current management system (charging, distribution management); these could be better utilized for future resources to shift or shave load, so he wonders if there could be a section or some discussion to say given an assumption of how we expand or modernize the grid. There could be



some clarification in terms of the forecast interacts with how the system will be managed in the future.

**Digaunto Chatterjee:** It's a really good point that we called it a demand assessment and not a forecast, because it goes the beyond ten years; we're simply translating the state's goals. It's confusing between sections 5 and 8. The peak is shifting—we'll clarify that. Secondly, storage, the CECPs, roadmap, future of gas all informed different information about heat pumps and looking at their impacts on electric demands. The CECP was very clear on EVs and heat pumps, but there was no clear target set about battery storage, so there's nothing to work with there. This is harder to forecast to take what we have now without knowing the end state to make any meaningful projections. With respect to EV charging, quite a bit of managed charging data is already backed in, but we have to make that much clearer in the document.

**Carol Sedewitz:** Sedewitz also appreciates how difficult it was to go from Section 5 to Section 8 would like to see them right next to each other. Maybe this is a change for the next ESMP cycle. A couple things stated today that were actually in the Excel file point to where they are in the document, from assumptions made, where the definition of DER is; we can cite those sources and will do those in the next round.

**Councilor Amy McGuire:** Regarding battery storage, there are specific numbers of vehicles projected in the CECP—all of those have batteries.

## **6. Section 9: 2035–2050 Solution Set**

Paul Alvarez, The Wired Group, went through slides 40 through 53:

- Slide 41: section outline
- Slide 42: most common elements of sections 9. An overall comment is we would have liked to see more of what's in Section 9 discussed in Section 6.
- Slide 43: Eversource had great images of how extreme the peaks can be; a few very cold mornings will drive that peak demand. If we can address those peaks, we can save a lot of money on capacity construction. Quite a bit of our reaction is the methods the utilities could conceivably employ to manage those peaks. One is the choice of electrification of heating.
- Slide 44: This slide talks about the difference in capacity needs and how different choices affect peak. Ground-source heat pumps are more efficient than air-source heat pumps because they don't have to convert extremely cold air temperatures. How do we balance grid capacity costs vs. heating system costs? A lot of ideas are on rate designs.
- Slide 45: demand charges—rates are affected by speed-oriented charges. The price of energy goes down (\$0.46 to \$0.28/kWh). If you reduce the speed with which you use energy (through ground-source heat pumps, storage, combined fossil-fuel air-source heat pumps), that becomes more attractive to customers. On the other hand, there are cons—as energy charges go down, solar is not as attractive, because you're offsetting energy that used to cost more. It's also tough on low- to moderate-income (LMI) customers, who will have a hard time shifting their usage from the peak demand period. Older, draftier, not-well-insulated homes are harder to keep warm during the coldest winter nights as demand charges are going up.

- Slide 46: Other demand management is through time of use (TOU). There is not enough specificity there—you can communicate a day in advance that customers may see higher bills if there is an extremely cold day. But people don't like it as a standard rate design feature. People will shop until they find a rate design without that. People like peak-time rebate programs (carrot vs. stick), and they can be offered by a utility regardless of the utility supplier and doesn't require you to switch rates.
- Slide 47: Demand response programs—maybe there's not enough focus on these programs. Also, why wait until 2035? We can start piloting and implementing and testing these programs sooner.
- Slide 48: Non-wires alternatives (NWAs) are an option. This section looks similar to Section 6. NWAs are seen as temporary. Storage is not less costly than capacity construction yet, but there are some of the best researchers in the world working on these issues. We also think that utility ownership of these resources can't honestly be more costly than third-party ownership in these situations; sometimes the utility will outsource this development and then buy it from them, and then the utility puts their own profit margins and taxes on top. Is it better for the third party just to charge for its service operating a storage facility and direct that to customers as an operations and maintenance (O&M) cost and not with the markup through the utility.
- Slide 49: Regarding LMI outreach and programs, financial assistance isn't always applied for. Programs are not a silver bullet. Over time, rates rise just as quickly; you can't only rely on these programs. There's also the broader economic impact of rate increases and of weatherization. National Grid talks about this a little bit in their Section 9. With poor quality insulated value of housing stock for LMI households and air source sensitivity to extreme cold, weatherization of that housing stock should be a critical part of the overall program.
- Slide 50: Responses to Eversource. What you really want to do in advance is plan. Building is the most expensive part, so can we manage that a little bit better? You want to maybe think two to four years in advance, not a decade. Eversource has a couple of very expensive projects that they discuss in Section 9 that maybe bear a little bit of consideration of alternatives. They're skeptical of demand response of heat pumps in winter, which is based on limited experiences. We think NWA limitations can be addressed in certain ways.
- Slide 51: Section 9 recommendations are reiterations of those of Sections 6 and 10.
- Slide 52: Putting Mass Save heating programs that will reduce demand on the coldest days, e.g., district ground-source heat pumps and the hybrid air-source heat pump / fossil fuel approach. There's a balance here we should strive for. We should avoid residential demand charges, mandating peak-time rebate options when they get their advanced metering infrastructure devices (AMIs). We want to make sure that we're working on those programs well in advance of 2035. How can we make sure that our forecasts include demand reduction potential to a reasonably aggressive degree?
- Slide 53: Weatherization—how can we combine these programs for LMI with perhaps electric heating incentives? Those are so critical to managing demand and improving long-term affordability for LMI customers. Let's look at other ways to improve affordability—can we moderate capital spending to improve affordability? Let's look at cost-allocation approach, maybe switching to an ongoing fee instead of an upfront connection charge, especially if it's based on demand. That might encourage them to add

more storage. And then ask the utilities to support the claims they make to the greatest extent possible.

### **Discussion:**

**Councilor Larry Chretien:** On slide 45, he would not support this solution at all, based on who he represents. Regarding slide 46, he would like more information on peak-time rebate programs. It would be helpful to see examples. On slide 49, regarding rates, in most places the low-income rate is a discount from the regular rate, and this would begin to track. I think it's time that we take another look at the discount rate and see if it needs to be indexed to some sort of energy burden index. This is about overdependence on natural gas, not about clean energy. He's not sure that this is our purview, but it's on the slide. In other words, he wanted to break the narrative that grid modernization is necessarily going to be something that is bad for all consumers, but if there is something we can do to mitigate rate increases for LMI, we should do it.

**Dennis Stephens, The Wired Group:** Regarding peaks, with this large increase in demand, it's going to be extremely expensive to offset those peaks. People are looking for ways to make money off of reducing that peak, and battery storage will be the way to go.

**Councilor Kathryn Wright:** She seconds Alvarez's comments about demand charges. There is a limit to how responsive people can be in how they can shift their demand; it seems very inappropriate at a residential level and seconds Councilor Chretien's strong remark that it's not acceptable for us to think about rate reform; we should look at other tools. She also wanted to second how last winter when the rates spiked, there were many people of regular means who were impacted by the affordability of our electric rates, even those who weren't enrolled in rate discounts. We need to see a lot more from utilities about how to mitigate this.

**Councilor Kyle Murray:** He appreciates the attempts at proposals about rate reforms; this is a big topic that has to get done. He seconds the big concern about straight demand charges' impacts on LMI customers. We're going to need to get really creative with this, and there's no one simple solution out there at the moment. Regarding slide 53, providing incentives that favor fossil-fuel supplemented heat pumps over pure electric, he understands the reasoning to drive down the peak, but still has major concerns and disagrees with this because of the costs associated with keeping up the gas system. Looking at this holistically, it's not just a person's home; a backup system requires extensive funding (GSEP gas system enhancement plan is \$40 billion). Maybe we look at moving some of that money towards grid modernization instead. He disagrees with that recommendation.

**Commissioner Elizabeth Mahony:** Mahony clarified what GSEP is and what it does, which is replaces leak-prone pipes.

**Councilor Sarah Bresolin Silver:** She liked the Eversource policy and regulatory discussion; it's interesting that that was in there and shows a lot of work to be done there. She also appreciated the discussion on tariff structure. If you put new and interesting information in a plan, people are going to want to know more. She'd like to know how Eversource is thinking about timing for going into the DPU to amend or create new tariff structures and what it thinks that process would look like.

**Councilor Marybeth Campbell, Worcester Community Action Council, representing a local agency administering the low-income weatherization program:** Campbell is curious about the California study. One of the challenges of the narrative and the LIHEAP programs has nothing to do with the control of the utilities, but how difficult it is for LMI to apply for assistance. She hopes that is acknowledged and addressed. The Community Action network is not a one-stop pony—they are there to help with access.

**Councilor JS Rancourt, Direct Expansion Solutions (DXS), representing the building electrification industry:** Slide 53 shows a great discussion about electrification, air-source heat pumps, and cold climate and peak days. We also have to size these heat pumps for the coldest day/hour of the year. The comments about ground-source heat pumps were very true; they are much smaller in demand electrically, but they're much more expensive to put in. The concept of hybrid and dual-fuel systems definitely has a big impact on sizing—if we can have a little bit of gas for that 2% of that for the year, we can size the heat pumps accordingly. There are other things that are pushing building designs to all electric, such as the stretch code; there should be discussion between utilities and stretch codes, especially if there is no gas backup and how that affects peak loads. We will need to see if there is some flexibility there.

**Commissioner Elizabeth Mahony:** There is the stretch code and the specialized stretch code—better retrofits reduce demand.

**Councilor Amy McGuire:** She hears Councilor Chretien on demand charge concerns and agrees with the issues, but she's very interested in the GMAC collectively pushing on how to fully enable all these flexible resource that we will have available and incorporate them into all of our lives. Again, she's not disagreeing with the concerns, but it would be beneficial for the utilities to think about the peak-time rebate program and how we can build up over time and through education and more integration of smart technologies on the building and transportation sides and what that can help us get to rate reform of some type. It's important to continue to enable consumers to fully understand the impact we all have. Being an educated citizen whether a resident or business owner is something we can take on.

**Councilor Jonathan Stout, Dana-Farber Cancer Institute, representing large commercial and industrial end-use customers:** The hybrid approach of fossil-fuel-assisted heat pumps seems aimed toward residential consumers, but the consideration for industrial or larger systems doesn't seem to have been included. How do we split this up from residential vs. commercial, and are there ways to incentivize those different permutations appropriately?

**Councilor Sarah Cullinan:** She appreciated Eversource's discussion about picking specific scenarios and indicating how ground-source heat pumps in some areas, we can reduce X substations. Those examples are helpful. That should be a model of how we look at every single investment. How certain is the need for every single substation upgrade? There's a certain number that we'll never get around to in the near term, but the further out in the forecast, there's a higher probability of avoiding investment. A comprehensive analysis can help target those solution areas. If we can characterize uncertainties driving feeders, we can learn how to integrate DER and storage and how they map across and impact the system.

**Digaunto Chatterjee:** That feeder-level granularity is certainly needed. A few different responses:

- Eversource does not take a position on rate design. We recognize that this is an important issue, and we would be formally asking the DPU to open a new docket regarding rate design principles.
- Beyond the ten-year plan, the only investments that Eversource has in terms of large grid infrastructure investments are two substations in metro Boston and three in Metro West. What we have after the ten-year plan is incorporated into the delta of where we need to go to 2050 and where we will be at that snapshot in time. We've identified that we will be fully electrified in metro Boston and western Massachusetts. That leaves us with Southeastern Mass and Metro West, which have massive needs of 11 new substations in each area. Because the gravity of what we're looking at is so significant, we looked at could we do ground-source heat pumps, and those regions went down to five new substations each.
- The CIP cost allocation we have is the most leading-edge cost allocation, and it is there for good reason: solar development is not happening in the Commonwealth where the load centers are. Having storage in those areas isn't really going to help with electrification needs or decarbonization in Massachusetts. So the CIP is to provide a template to move ahead of the reactive to a proactive mode to where solar wants to go.

**Commissioner Elizabeth Mahony:** We can do a lot with solar but need to do a lot more with the grid to make sure it can happen.

**Councilor Kyle Murray:** Murray agreed with need for comprehensive planning. We need to be doing this planning on a street-by-street level of what we can convert from gas to electric. It's a lot of work, but really necessary.

**Commissioner Elizabeth Mahony:** There is a lot of discussion about Mass Save and weatherization and decarb underway there, but there's a deep historied process underway right now with the EEAC; she spent four hours with their equity working group earlier in the week. For here, we should be considering how should work we're doing here inform the EEAC and vice versa. This is not an EEAC effort, but the two are inextricably linked. She unfortunately has to leave at 3:30 p.m. and will turn the meeting over to Aurora Edington.

## **7. Section 11: Gas-Electric Planning**

Tim Woolf presented slides 58 through 62:

- Slide 58: We all recognize gas-electric planning is a big and important issue and it is early days. The chapter is very brief because it's such a nascent issue.
- Slide 59: The sections in each ESMP are nearly identical, which is helpful from a readability perspective. The points are clear: there is a need for more planning to manage decarbonization more effectively. The two industries are inextricably linked. The planning has been done in isolation, which is outdated—needs to be more integrated. There are important program design questions about how to organize demand-side electrification. This section does not reference or consider the Future of Gas study, but

maybe that's a good thing—otherwise, you would expect there to be more reference to or reliance upon that in the 2050 roadmap.

- Slide 60: This is really the first step, as noted in the plan, that there needs to be more work done. There is a need for the joint working group, data exchange, coordination around maintenance and investment for safety and reliability.
- Slide 61: There is not a lot about steps to take; there's very little detail. And the question of what they expect gas companies to do and the evolution to drive electrification of different end uses, especially electric fleet, there are huge challenges here educating customer-side transition. Lots of things are not mentioned here. Assessing or leveraging best practices from other utilities in the U.S. could be worthwhile.
- Slide 62: Recommendations follow reactions—there needs to be much more detail. We don't expect there to be the whole story, but clearly how gas decarbonization influences electric is essential to load forecasts and plans. Complying with the CECP in line with the forecast was a missing part of this. The Joint Utility Planning Working Group connection needs to be made here. On that point, we'll be talking soon about benefits and costs, as required by the act, and when thinking about that regarding the electric companies, we need to think about how that affects gas companies and costs going down for gas customers and the story is not simple and recognizes that. We need to consider how this affects both industries. Finally, rate impacts on gas and electric need to be considered as a whole.

### **Discussion:**

Edington was designated as Chair at 3:30 p.m.

**Councilor Kyle Murray:** In Acadia's [RESPECT report](#), they identified many of the needs and challenges mentioned here for comprehensive planning. It's a challenging section to review because it is so short and not filled with the level of detail that we need. The idea is that this joint working group would eventually get to a point that require hundreds of pages themselves. We just need more details here—even the first steps. He couldn't provide much of an analysis here. It's hard and we need to do it.

**Carol Sedewitz:** Sedewitz appreciates this, and points to how to improve the plan and make them more understandable. It is challenging; we are at the forefront. Eversource and National Grid have been working together on this, and it's very localized. How you make the economic shifts and drive those changes is really a challenge—when it comes to getting down to the street level, there aren't tools in existence today. We'll try and add more to describe some of the additional things we've been doing over the past year to highlight what we've learned. We did just do a gas decarbonization summit in a New York jurisdiction and presented there, bringing in utilities from around the country as well as consultants and folks from Europe, and learned a lot about what's happening elsewhere.

**Councilor Sarah Bresolin Silver:** She liked Eversource's discussion of orderly adoption and thinks that's a really important consideration, especially with heat pumps that are going into millions of homes in the state. She also really liked the idea of coordination on the gas and electric systems and is curious and would encourage that what an orderly adoption looks like and

how we meet the goals, and the plans do address that to a certain extent, but liked that concept because we have these big goals and it's hard to see how we're going to get there.

**Aurora Edington:** It was great to see the numbers outlining the percentage of overlaps between electric and gas territories; it would be interesting to overlay those maps (maybe it's a GIS layer). Then it would be helpful to see the EJC overlay and see that dimension as well.

**Digaunto Chatterjee:** That is Step One—we are looking internally where there is gas and electric overlap. We're looking at developing a plan that starts with the investigation of the low-pressure pipes and then to medium-pressure pipes at street level; granularity becomes important. Then we'll see what needs to be decommissioned and understand what that translates to on a distribution feeder electric demand level. That doesn't exist today—the gas model is built by B&B as well as electric, and we've been having some conversations on creating a translation. Then we'll look at where we see constraints on distribution feeders and see how that aligns with the ESMP to look at upgrade deferrals.

**Paul Alvarez:** The D.C. Public Service Commission did a “treat and transition” study called “Strategic Electrification in Washington, D.C.: Neighborhood Case Studies of Transition From Gas to Electric-based Building Heating” (authored by Bob Ackley and Nathan Phillips), which is a triaged approach to identify those parts of the system that are oldest and will need the most investment, starting there with full electrification to avoid some of those GSEP costs. He will share this with the DOER to distribute to the GMAC.

## **8. Close and Next Steps**

Aurora Edington reviewed the next steps for the October 26 meeting (Sections 1, 2, 7). October 13 is the joint CETWG-GMAC. There will be four presentations, each six to seven minutes.

**Councilor Kathryn Wright:** She's trying to get a sense of how the results from tomorrow's meeting will be integrated back in this process, or is this more to inform what CETWG is working on? Do we need to prepare or provide additional comments back to DOER after tomorrow?

**Aurora Edington:** The law requires coordination, so having a joint meeting is a good first step. We don't really have a process in place for that. Honestly, if folks have strong recommendations that come out of it, maybe put that in your recommendation sheets for the October 26 meeting.

**Councilor Sarah Bresolin Silver:** She believes they have a report due by the end of the year and thinks will have more thoughts tomorrow after the meeting to see what value that brings.

**Aurora Edington:** At a minimum, we'll discuss it at the ExCom meeting on October 27.

**Councilor Amy McGuire:** She supports idea of recommendation spreadsheet section for reactions or feedback.

**Councilor Kelly Caiazzo, Attorney General's Office, representing the Office of the Attorney General:** As packed schedule as our schedule is and how much have to cover, she thinks the

CETWG has a few meetings between now and when their report is due. They'll have fairly limited ability to get takeaways during tomorrow's meeting.

## **9. Close**

Aurora Edington, as Chair, adjourned the meeting at 3:46 p.m.

### **Meeting materials:**

- Meeting agenda
- Meeting presentation slides
- Draft minutes from September 28, 2023, GMAC meeting
- Master summary (spreadsheet) of ESMP recommendations from the GMAC (Sections 6, 10, and 12)

Respectfully submitted,

*Jennifer A. Haugh*  
GreenerU