DRAFT

Massachusetts Electric Vehicle Infrastructure Coordinating Council

Thursday, November 30, 2023 | 1–3:30 p.m.
Via Zoom

EVICC members

- Undersecretary Michael Judge, Executive Office of Energy and Environmental Affairs, EVICC Chairperson
- Eric Bourassa, Director, Transportation Division, Metropolitan Area Planning Council
- Aurora Edington, Department of Energy Resources
- Laura Gilmore, Director of Strategic Transit Planning, Massachusetts Bay Transit Authority
- State Representative Jeff Roy, Chair, Joint Committee on Telecommunications, Energy, and Utilities
- Commissioner Staci Rubin, Department of Public Utilities

EVICC member designees

- Audrey Horst for State Senator Mike Barrett, Chair, Joint Committee on Telecommunications, Energy, and Utilities
- Sharon Weber for Brian Ferrarese, Department of Environmental Protection
- Clinton Dick for Undersecretary Layla D'Emilia, Executive Office of Economic Development

Additional attendees and presenters

- Rachel Ackerman, Director, Massachusetts Clean Energy Center
- Eric Friedman, Executive Director, Leading by Example, Massachusetts Department of Energy Resources
- Daniel Gatti, Director of Clean Transportation Policy, Executive Office of Energy and Environmental Affairs
- Jennifer Haugh, Vice President of Planning and Customer Engagement, GreenerU

Meeting goals

- Approve meeting minutes from October 5, 2023
- Provide the EVICC updates on:
    - Telematics data of every state vehicle to state facilities—deployment of state EV infrastructure
    - The Charging Infrastructure Deployment Fund: proposed budget outline
- Get progress updates from other EVICC initiatives
- Provide time for public discussion / comment

Agenda and minutes

1. Call to order

Judge called the meeting to order at 1:07 p.m.

2. Approval of meeting minutes

Approval of meeting minutes was postponed to allow members an opportunity to review.

3. Presentation: Telematics data of state vehicles and deployment of state EV infrastructure

Vincent Micozzi, Director of Fleet Policy and Administration, Office of Vehicle Management, Operational Services Division, presented on Executive Branch fleet electrification: current efforts, challenges, and next steps. Discussion followed.

Rubin: I'm at DPU and we are very interested in doing this, and we've run into several hurdles. One suggestion I have is to use the tool based on future hopes for what the agency wants to have. So maybe do a survey to determine garaging locations might be based on a forward-looking view in terms of highest priority locations. Also, a lot of our field staff who rely on vehicles are parking at home and not around the state because they don't need to travel to our office. Any sense of how many could rely on home charging?

Micozzi: Domicile is a challenge that has to be solved. There's a number of requests we've received for the exemption process: emergency response is one of them. Another is not having an office within a 22-mile radius or some type of second-line emergency response their vehicles make. There's a multi-pronged approach. We either electrify their home, something that needs to be vetted through unions; establish a funding pathway (the DOER is potentially working on that actively); or we use telematics data to identify the closest state-owned facility where someone could electrify—they would have to drive to that facility. But then there are challenges about what happens to the true domicile privilege. Domicile is less than 10% of the entire fleet, and non-emergency response is about 5% of the entire fleet. This means maybe there are other areas of electrification to tackle within the first other than domicile. We also need to be fluid within the agency; some agencies are primarily domiciled, and others are not. We want to get each agency to the 5% zero-emissions vehicle (ZEV) goal by 2025. There's a lot of work to do, but there are options to solve those problems. We'll need to get stakeholder involvement with unions.

Rubin: I would love to stay involved and keep in touch, and resolving these questions is a prerequisite to doing that.

Judge: Note that this domiciled vehicle question has come to the forefront lately. In my opinion, there's a small number of vehicles, but it's thorny thing to solve. We're hard at work on this and recently heard examples of how Colorado is dealing with it. It seems like we need some kind of state policy on this before we can start telling agencies what they should buy for domiciled vehicles, because we don't want each agency to come at this with their own policies. But we're acutely aware and trying to work on this.

Micozzi: I understand a number of agencies will have to engage.

Judge: The climate office does have some discussion about coordinating on statewide efforts to be done by February 1, so maybe that's a target date to start identifying what a pilot might look like or general parameters or issues.

Edington: I just wanted to point out that Eric Friedman from DOER has been promoted as panelist to talk about what he's working on.

Friedman: We've been talking with Vinny and others about the domicile challenge for quite some time. As Undersecretary Judge said, we're looking at the Colorado model, which developed a pilot to fund and reimburse domiciled vehicle users for electricity used after they install charging at their homes. Developing as we speak is a list of protocols and processes that would need to be in place for funding and rules, strategies to get charging in people's homes and also how to deal with reimbursements, state service, etc. There are a lot of questions that would need to be answered; we are looking at this and it's a priority. For people who live in their homes and have a driveway or garage, it's relatively straightforward. For others without access to private parking spaces, that'll be a thornier question. Hopefully we can make some inroads.

Judge: Just a quick question: I imagine this is an issue for municipal fleets too—are there lot of domiciled vehicles there too? What the state does here could end up being an example for what's done on a local level.

Friedman: Maybe, but geographic boundaries are much smaller at the municipal level, so they may not have the same issue. But it's a good question. I will check in with Green Communities and ask.

Edington: My Green Communities colleague is saying this is not as much of an issue for municipal employees but would be for some fire and police chiefs.

Roy: I've been trying to identify which entity or agency handles charging within the state house, because I hear from frustrated colleagues who are trying to charge their vehicles in the State House garage. I happen to share a space with an Executive Branch employee and there is a great need for them, and I think if we're going to be establishing policies across the state, we should be at the top of the heap in the State House. I'm wondering who I should be chatting with about that very issue.

Micozzi: Probably somebody at DCAMM? They've been great partners in getting EVSE in state facilities and we can check on their plan for that location. One of the challenges is exactly what you just mentioned: who is responsible for which location. Sometimes that lack of clarity can pose an issue for individuals and getting EVSE in timely manner.

Friedman: The Bureau of the State House is a separate department that manages the State House property and I believe they reached out to DCAMM on this very subject. DCAMM either did or will get in touch with them to try and coordinate an answer to that question. We can check to see if there's been any progress.

Roy: That would be helpful. I've been dealing with folks at Eversource to see about this, and wondered who all the players are to get into this mix of information.

Gatti: This has been a useful exercise for us in public policy to see what state agencies and in the private sector are navigating.

Roy: I get the plight—I bought an EV and moved into a condo with no charging. I understand the issues so well now.

Weber: One of the slides had a column on voltage for cars. Have you talked with the utilities? Because there might be some sites that are easier to electrify than other sites.

Micozzi: Maybe 25 or so? Yes. The column labeled visits means individual visits to that location. This is used to make determination whether Level 2 or 3 charging would be the most applicable unit to install there. We're not looking at voltage demand, though that would be helpful; we're looking at vehicle travel and garaging, which helps make decision of how much electricity you'd have to pull into a single site. The OVM is not spearheading an initiative here; our role is we have data to help make decisions on electricity distribution. Our goal is to build our strong network of fleet charging as a foundation so we can hit the 2025 EV goal without an issue, and then move on to the 2030 goal. Our fleet will hit the 5% likely without any challenges by the deadline; 2030 is something we'll need the network built out for. Our goal is to say we have this data and tools, and we want to help to get fleet electrified at the rate it needs to be.

4. Presentation: Charging Infrastructure Deployment Fund and proposed priorities

Judge introduced the next presentation topic of proposed priorities for the Charging Infrastructure Deployment Fund. The EEA and Dan Gatti have done some thinking on this, and this presentation is to walk through program ideas, get feedback, see if there are any other ideas. Judge noted that these are federal ARPA funds with some restrictions tied to it. Everything would need to be under contract by December 31, 2024 and all dollars have to be spent by 2026. This is a pretty quick turnaround to spend $50 million, but we are trying to spread it around to different agencies and set aside some larger chunks for programs.

Gatti presented.

Horst: On the first recommendation, is there any funding needed for the suggestion of a registration system for public chargers (Division of Standards)? Do they need any funds for a database, when EV chargers go out of service, etc.?

Dick: I'm sitting in for Undersecretary D'Emilia. This is a great question—I would like to take that back to Undersecretary D'Emilia and have that discussion, and we can talk directly with DOS about that.

Judge: My understanding is DOS did note that there will probably be a need for appropriations down the line for support staff, and I'm guessing there's some language associated with setting up that registration process, too. That's something that's probably happening in parallel; we can move on this pretty quickly, get some staff hired, etc., and work with the Legislature on a longer-term funding solution moving forward.

Bourassa: I really appreciate inclusion of a municipal support program. That will really go a long way to supporting cities and towns and EJ communities in particular where there are a lot of multi-unit dwellings and address the challenge of the garage orphan issue. I have question about about mobile charging: are you envisioning that through MassCEC like some of their others about testing and piloting these types of new things to see business model? How that could be expanded?

Ackerman: There is a potential to lease assets across the state so we can deploy assets as needed. We may look at larger grid integrations with fleets as a test case, but we can deploy some immediately.

Bourassa: State-owned assets?

Ackerman: Potentially—we could find out how the state could own these assets vs. doing test case where a private company would own the assets and see whether slower charging is better than DCFC.

Gatti: Addressing Anna Vanderspek's question in the chat regarding a demand charge alternative: that's correct that the DPU decision does reduce some incentives for on-site storage for DCFC locations. Not to say there weren't good reasons, but that is one consequence. Part of the context for why we see additional support for this program to address some of those initial costs as being important and a valuable contribution, even as we know that demand charges are one of the factors that reduces financial viability. As to your other question about funds being "available and aligned" to utility EV programs, my understanding is it's aligned and consistent with them.

Rubin: I have a question about costs. These are fantastic ideas, but I'm worried that it's not a ton of money.

Judge: We were hesitant to put firmer numbers down because of ARPA; the way it's expended can influence how much of it is used. MassCEC is not a state agency, but DCAMM is, for example. We have rough estimates, but exact dollar values may shift depending on ability of actual branches to spend the funds. Our goal is to circle back up, talk to fiscal folks, try to finalize budget by middle of December so we actually have dollar figures committed and start executing on the plan to move the money. Because it's EEA that directs the control of these, but the funds sit with Administration & Finance, we need to work with them to distribute funds to agencies. It's doable, but an extra step. We want to get that going quickly in the new year so we can get to work on these programs.

Ackerman: With the last ARPA transfer, it didn't count as encumbered, so we should talk about this.

Judge: We do have people who have dealt with this before. We can talk next week. I like your approach of hiring a vendor that can distribute the funds and then they can be considered encumbered.

5. Progress updates

   a. MassDOT—National Electric Vehicle Infrastructure plan for Massachusetts

      Aiello reported for MassDOT. The National Electric Vehicle Infrastructure program came out of bipartisan infrastructure law makes provisions for alternative fuel corridors (AFCs) across states. Massachusetts created a plan. There are a number of AFCs within Massachusetts; the procurement objective is to build out DCFCs along those corridors.

      The technical requirements are laid out by federal law: minimum of four chargers per location, 150 kW per charger, and to get to fully built out status, there should be more than 50 miles apart along AFCs. This is really geared toward interstate and long-distance travel—it's meant to address range anxiety and barriers to charging. There must be 97% or better uptime to get the full benefit of the contract, and there are financial incentives to ensure we have good uptimes.

      We are working toward release of our procurement plan for NEVI by end of the year. The target date is December 19, but it's a sprint. This will be multi-phase procurement process starting with an initial response, a second response, and awards likely taking place in May. The plan for the end result will be to create a small pool of a handful of qualified developers that we will then sign on to perform pre-contracts to do due diligence on specific sites, then request proposals for build-out, then task orders of creating the most benefit to the Commonwealth, then issue awards to winning developers. The process is lengthy, but we're using this because it will make future rounds more efficient. The procurement is lengthy—predevelopment work is outsourced—but as you need to address different zones in the state, which allows us to issue new task orders more quickly rather than for procurement for a full NEVI buildout.

      In round one, we identified gap zones, which were updated in the past few weeks based on analysis of charging infrastructure. There are three buckets of NEVI EVSE locations. One is state-owned (tier 1). The second is non-tier 1 state sites of service plazas along or near AFC. These are already existing quasi-NEVI-compliant sites. Because they exist or are being built, if they already have four 150kw chargers but are not contractually connected to NEVI, we're talking about bringing them into NEVI compliance—it doesn't make sense to fund something comparable practically next door. The third location bucket are gap zones where there are no currently existing private or public charging sites. Currently there are four gap zones: Route 2, I-91, sections of I-495, and I-195 down in the New Bedford / Fall River area.

      We will task the award-winning developers with selecting sites and proposals, costs of build-out, schedule, proximity to EJ communities, and value criteria. We may not be able to use the same procurement process for other sites, such as the use of federal funds on the Mass Turnpike. We're also working with a master operator who may be able to deploy to different types of sites. Separately, we've heard of concerns about EV charging stations on the Pike that don't work right now; a highway team is working on fixes. Contracts are waiting to be signed. New chargers should be up and running at those locations within couple of months.

   b. MassCEC—workforce development

Rachel Ackerman, MassCEC, presented ACT4All Round 2 slide deck.

c. DOER—GMAC recommendations to the DPU

Aurora Edington, DOER, presented. The Grid Modernization Advisory Council (GMAC) is an 18-person council charged by the Climate Law to supply recommendations on the electric sector modernization plans (ESMPs) that the state's three investor-owned utilities put together. The GMAC had 80 days as determined by law to review the plans they received September 1. It was a very intense process—big thank-you to all of the council members who participated. They delivered a final report to utilities and shared with the public. There were 37 observations and 88 recommendations, including overarching recommendations and 77 section-specific recommendations.

A couple key points: one of the overarching recommendations GMAC provided was that the electric distribution companies (EDCs) should be more transparent about short- and long-term load forecasts. There were five-year, ten-year, and long-term demand assessments, and the recommendation was that these assumptions behind the short-term assessments should be clearer, more transparent, and cited more explicitly in the plans.

Another recommendation was for more comprehensive stakeholder engagement in the forecasting process. This first round shortened the timeline when they were put together, but certainly across different sectors impacting grid forecast, existing working groups should be leveraged to help with forecasting.

Another recommendation is to see more detail on the five-year plans for peak demand management and reduction. There was very little attribution to managed charging in the current peak forecast, so Eversource does not assume any managed charging in their forecast; National Grid does a little. That's an area where stakeholders would like to be more engaged on and look at different scenarios of forecasts.

As a last note, GMAC had a sub-group, the Equity Working Group, that did fantastic work in a short timeframe. Their memorandum was adopted with a set of 12 equity-specific recommendations as relates to the ESMPs and distribution system planning.

Next steps: the EDCs have 70 days from when they were delivered recommendations to update plans to file with DPU. They will file these updated, finalized plans on January 29, 2024, starting a seven-month proceeding where the DPU will approve, modify, reject, or do something else with the ESMPs. The GMAC will be meeting on December 14 to talk about the process and look ahead to future processes and that docket activity.

Discussion followed.

Gatti: Could you give the group a sense of the scale of the infrastructure investment?

Edington: Yes. We had two public listening sessions that included high-level overview and received public comment. Ultimately the ESMPs were intended to be broad plans that encompass all investments that are either approved or intended to request, or a pending proceeding with DPU. There's a lot in there such as capital investments for Eversource that total around $6 billion.

Weber: How nitty gritty were these plans? If I'm a company that's ordered my electric truck and it's arriving at the end of next year, when is my infrastructure going to be ready? I'm curious if the GMAC will get to those specifics.

Edington: GMAC did not get into those details—the plans are 1500 pages of technical, very dense material. The utilities do provide a lot of detail in some respects; I might recommend Section 5 (short-term forecast), which each utility breaks out by sector. For transportation, I know that Eversource classifies fleet electrification as a "step load," which they handle as "new larger load requests." National Grid does it a little differently. The ESMPs don't get into implementation; they are more high-level forecasting and strategic vision. I would like to explore what kind of stakeholder processes we can set up on a sector-by-sector level leveraging existing groups to gut-check some assumptions that hope to get to that implementation level, because it's not just transportation seeking to connect new load. Across the need for grid interconnection, there could be some stakeholder engagement to be done.

Listening session slides are available on the GMAC website. Eversource's summary of five-year investment shows about $1.2 billion every year, which is cumulatively $6 billion. New proposed investments were about $0.6 billion (grid modernization, CIPs, resiliency). National Grid has a similar graph.

d. DPU—rate cases

Commissioner Rubin talked about rate cases that were filed with the DPU, next steps, and the procedure.

We had a very busy August 11 relating to EV issues. Both National Grid and Eversource filed very robust plans for time-of-use (TOU) rates specific to EVs.

Eversource's plan proposes a new EV rate class to residential customers with chargers and metered demand ≤100 kW. Eversource wants to incentivize off-peak EV rates. There are several different components: there will be a separate meter for EV chargers to measure load. The proposed peak period is 12 noon to 8 p.m. for non-holidays and weekdays; non-peak would be anytime outside of those times. Eversource is proposing to offer this rate approximately one year or after installing advanced metering infrastructure (AMI) and associated supporting system such as upgrades to billing. The company is planning to roll out AMI between 2025–2028, so 2026–2019 would be the timeframe for when this rate class would roll out. Potential savings to customers charging only during off-peak periods would be a 1–10% decrease in their monthly bills if approved as filed. More information about this docket can be found here.

National Grid has a similar proposal to create an EV rate class for residential and small commercial EV owners as well as owners of EVSE. This would be ≤200kw. They are similarly offering a rate class for off-peak charging, only applied for electricity to support EVSE. This would require a separate meter for EV chargers. This rate design is based on (a) a fixed customer charge, (b) volumetric TOU energy rate for distribution, and (c) volumetric TOU energy rate for basic service. The proposed peak period is 1 p.m. to 9 p.m. for non-holidays and weekdays; off-peak is anything outside of those hours. National Grid is similarly offering to look at this rate class at least a year after the rollout

of AMIs, similarly within the 2025 to 2028 timeframe. Proposed bill impacts would save customers an average of $23 per month. More information about this docket can be found here.

These have been filed and staff has been asking questions. Key dates on this include a virtual public hearing on Wednesday, December 13, at 2 p.m. Written comments are due at 5 p.m. on the 13th. Intervenors have a 5 p.m. deadline on December 6. Information is as follows:

DPU will be holding a virtual public hearing in the EV TOU rates proceedings on Wednesday, December 13 beginning at 2:00 pm and welcomes oral comments from interested persons at the public hearing.

Attendees can join by entering the link, https://us06web.zoom.us/j/86954605205, from a computer, smartphone, or tablet. No prior software download is required. For audio-only access to the hearings, attendees can dial in at 1-646-931-3860 (not toll free) and then enter the Meeting ID# 869 5460 5205. If you anticipate providing comments via Zoom during the public hearing, please send an email by Tuesday, December 12, 2023, to Scott.Seigal@mass.gov and Kevin.Crane@mass.gov with your name, email address, and mailing address.

Memo regarding open dockets and stakeholder process: https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/18218522

There is a lot of interest in these dockets from all of you listening and beyond. The DPU did direct the utilities to create a stakeholder process to discuss proposals, limit any issues coming up for formal proceedings, and allow for free-flowing conversation. The first meeting has to happen within 60 days of the December 13 public hearing. They have been asked for a report to be filed with DPU explaining how that went within 30 days of the final stakeholder meeting. I also wanted to mention ongoing stakeholder process on data access issue on AMI deployment and discussion around time varying rates and how TOU rates may be implemented for EVs.

Judge: Are the companies' assumptions around savings predicated on the assumption that these are basic service customers and not retail supply customers?

Rubin: Correct. If people want to look at filings themselves, there are more details.

Judge: Docket?

Rubin: DPU 23-84 is Eversource. DPU 23-85 is National Grid.

Gatti: Rollout plan?

Rubin: Open for discussion—these are substantive issues; we'd like to direct people to the docket to talk about it.

Judge: In the net docket, it was found that that was not feasible to prioritize one set of customers over others. Could you push AMI on those who want it on an accelerated timeframe? But the plan was a geographic rollout. We tried doing that at DPU—prioritizing EVSE locations—but didn't work.

Edington: There is an AMI stakeholder working group on which I am currently engaged. We've had two meetings, with one more coming up on the data access issue. One thing to bring back is we're still looking for more of a process and implementation plan from the utilities on how this will work and with what timeframe. They haven't put together a framework, but there's more work to be done on what the implementation of the framework that looks like. It's true that AMI is to be installed on a geographic basis, but the working group is cautious about committing to rolling out certain functions in some regions vs. other regions. Regarding EV TOU, I have a question for the group—in thinking about future-proofing potential peak management capabilities, question I have is with current business-as-usual installed EVSE meters, are they already ready to implement TOU rates? It's really important that whatever is being installed now will be ready in the future—maybe there is a software update that could automatically be updated?

Weber: My question would be quite similar; do we need to use the most expensive AMI meters, or can I just use the EV meter in the charging station already installed at my house? What did the utilities propose, without giving a DPU opinion on the proposals?

Roy: By giving control of my EV through the internet, they'll send me a text indicating when they will turn on or off charging based on TOU. It's not as sophisticated as some software proposed out there. National Grid is saying deployment is as early as June, but that might be ambitious. There are some ways of doing it today, but not as easy or nimble as AMI would allow.

Gatti: I think there probably are a lot of stations that would not have that capability, and I wish I had a sense of the scale of percentage, but the status quo is that a lot don't and that will be a challenge.

Rubin: The utilities raised several concerns in their EV dockets and decided at the end of last year about current technology and what meters can and can't do. One concern is that DPU doesn't have regulatory authority over third-party-owned meters, which don't have the same consumer protections as for company-owned meters. There are national standards for metering testing and monitoring that some do not have. The Department directed stakeholder group to meet with metering capabilities and vehicle telematics for data collections and directed coordinated efforts for uniform data quality standards. Essentially a number of challenges are not yet worked out prevent this from being readily available statewide to all ratepayers today. I will also note that the stakeholder working group are discussing billing capabilities of EVSE and they are always important when talking about rates.

Gatti: I appreciate Anna Vanderspek's comments in the chat: "I know you are not asking the general audience, Aurora, but I am giving an unsolicited answer! AMI is needed for a time-of-use rate because only an AMI is revenue-grade. However, the utilities can offer off-peak charging *rebates* via telematics or smart EVSE. That's our understanding."

Weber: Metering is controlling my charging station; as opposed to Chairman Roy, I don't even notice.

6. Public comment

Bob Armstrong: Commissioner Rubin, TOU rates are huge. I'm puzzled that it's being combined with EVs. These should be for everyone all the time, encouraging people not to use power during peak time. The biggest example is people with solar panels; they only drop power at night, then power comes from nuclear power plants across the state. This costs the utilities almost nothing, yet the utility charges the full average cost for what they charge everyone. It's a crime. Yes, we should do TOU rates. I don't see why we are coupling them with EVs. Some municipalities are doing interesting experiments with TOU rates, each differently. Go to them, talk about their experiences. I'm not looking for an answer, I but couldn't help but think that. It's interesting that Representative Roy and Sharon Weber are both in municipalities and both talked about their experience with TOU rates.

Rubin: I appreciate your comment; I hear you, well noted. The reason I'm mentioning those two dockets as TOU specific to EVs because 2022 Climate Act directed that the utility companies directed them to address that statutorily. The current Commission is interested in what you're saying.

Judge: I will add that we are very interested in more holistic redesign to advance decarbonization for heating and transportation, and also taking into account solar and storage for customers, so we are actually working right now and will hire a consultant to help us analyze the existing rate designs in Massachusetts and identify medium- and longer-term rates that could be deployed to advance decarbonization through things like TOU, seasonal, and more complex rate designs. Our goal is to get this data, hear from stakeholders next year on the topic, and advance some recommendations for review to have rates in place when AMIs are rolled out. Customers will have heat pumps, EVs, solar. More on that soon. National Grid and Unitil have proposed rate cases right now and proposed rate designs through those; there could be enrollment for TOU and heat pump rates for customers. This is all keeping pace with the infrastructure we have.

Armstrong: My other question is I attended the public meeting in Holyoke, brought up a topic, and then haven't seen much. I was hoping to see more about that today. How are you going about advertising chargers being installed? How are you letting the general public know? Why not today about the very real number of chargers that exist along the Pike today? The Mass Pike does have good coverage of chargers, yet none of my non-EV-driving friends know about them. There are exit signs about fuel, yet not a single sign saying there's a charger at this exit. And there are chargers at many of the exits. People are not going to buy electric cars until they believe there are chargers out there. This seems like the easiest problem to solve—just make some signs. It's easier than installing a charger and negotiating where we can put them and all the rules. Many parking lots already have four or more high-quality chargers in their lots that work really well, and yet nobody knows about them. If we want to get people to buy EVs, we need to tell them that there are chargers out there. Tesla drivers don't know where non-Tesla chargers are. Chris, your talk was the most important talk of today, because it's about how we're going to charge the cars for all of the non-state employees.

Gatti: We appreciate your passion and advocacy.

Judge: I remember you talking at our public hearing. It resonated with everyone who was there. Secretary Rubin was also there. I think this is a little bit more in MassDOT's purview. I also remember the spot in the Globe. You brought a lot of attention to this issue; I'll freely admit that it's a little outside of EEA scope to address. Chris, anything you want to add?

Aiello: Bob, you are correct. I'm not an expert, but there are federal regulations about highway signage, and there are unfortunate limitations on how to advertise EV fueling stations—but there are allowances. Even within the current regime, there's room for improvement and that's something we should focus on. Great to see those rules updated in future to allow for better signage as well. Something I didn't cover earlier is one shortcoming of NEVI is until we get to fully built-out status, NEVI funds can't be used outside of AFCs. And a lot of very busy long-distance travel corridors are not AFCs—Route 7, Route 9, for example.

Judge: You mentioned federal regulations on this. Are those regulatory provisions derived from federal statute, or is there something we've got to change?

Aiello: I don't know, but what I've seen is there's a standard style guide of what can go on the signs. My understanding is generic EV charging logos are allowed—not brands like for fast foods, etc. This is problematic because there are competing charging standards, types, and speeds.

Roy: I'm on my fifth EV. My current vehicle is a Ford Mustang. Every car I've ever owned tells me where charging stations are, and even more sophisticated ones will tell me where slots are open and will filter for you to tell you speeds.

Armstrong: Thank you, but this is not for the EV public—it's for everyone else. I want everyone in the driving public to know that they exist to change people's minds.

Gatti: I totally hear what you're saying; it's one of these issues where we the owners know and want others to know. To the extent that funding can help here, it's something that we'd definitely want to look at.

Judge: We're committed to trying to solve this, and we completely agree with you. Not all of this is within our power, but maybe we can explore this. We will talk to Chris outside of this meeting.

John Liriano: On medium- and heavy-duty fleets, I work for Peterbilt Truck dealership and sell MHD trucks. I work with customers, public and private, on electric and alternative-fuel vehicles. For long-distance travel, mobile charging is a great idea for a couple reasons, especially because some private businesses are in rural communities with energy constraints. These temporary charging stations would be essential; however, money would be better spent educating these fleets and trying to get them to start moving toward electrifying and readying their site, rather than on temporary charging stations. The reason is, I've been going to a lot of municipalities and businesses, and no one really understands the infrastructure piece at all. There are some misconceptions, factual, myth, whatever, that the grid can't handle the load for MHD vehicles. On top of that, there are a lot of education gaps that need to be addressed when it comes to infrastructure no whether or not the grid can handle it and what utilities are doing. There are a lot of programs, but they aren't reaching people who need to take advantage of them. You guys should look into figuring out ways to do better outreach and education, and another would be capacity building. Municipalities, fleet managers, or fleet owners are also probably handling trucks, grants, utilities; they don't know about sustainability. Lots of capacity building would help private and public fleet operators and owners take advantage of all this you're talking about to make informed decisions about what they're going to need for their trucks. Another point: regular testing of equipment for EV charging is great; you should do that, standardize that. One thing to stress should be added here is accessibility, digital accessibility, and making sure the information doesn't have 5 million apps. There has to be some way to consolidate this so all information is available in one app, regardless of whatever charging station you're using, just for ease of use. Lots of stations have card readers and some don't. Those who do have to rely on an app. It's just a burden on top of making sure they aren't just overcharging or there's inaccurate or downed chargers for months at a time (e.g., in Braintree). I would like to know if this group has looked into on the MHD, have you looked into education piece, capacity-building, and a fleet advisory program. I think there needs to be a little more work done, especially in some smaller towns and businesses on the western and central side of the state.

Gatti: Interestingly, we did just provide some funding to do more marketing and outreach through MassCEC. I know this is something they're taking seriously.

Dick: The Division of Standards would be looking at this potentially through existing statutory or new legislation developing regulations around this. It's a part of the process that he'd have to defer to DOS and undersecretary for these…[Clinton Dick's computer died.]

Judge: One of the things DOS was responsible for going forward is also establishing standards for payments and how customers are charged. Publicly available charging and accessibility standards all falls under them,

and they are just beginning to do this work. They will need a little additional support from the statute, but it's definitely on the list of things they are tackling.

Liriano: With regard to testing of chargers, depending on the vehicle, on both the charging and vehicle side, you have issues with the "handshake." We have trucks we demo for EVs and have to sometimes use public chargers. And they're not made for trucks. Also the handshake thing—not sure if there is a schedule to make sure stations can accept or have access to whatever systems they need for light- or heavy-duty side. Although the priority is depot charging, the reality is there will be instances where they're depending on the customers to do an unexpected stop at a public charger. That is something you guys should be looking into as well. Also future-fund for public chargers to make sure bigger vehicles can use it if they need to, because right now they can't.

Anna Vanderspek: Regarding managed charging—I know I'm a broken record, but I will just stress how critical it is to get this right, specifically on the point on the DPU dockets. I'm glad there's a whole process and space for stakeholders that's more free-flowing than formal DPU process. I caution that AMI will help us figure this out or that there's a lot of time. Right now there could be more programs that the utilities could offer; there is currently a National Grid program, but no Eversource program. Really key regarding mass adoption is we need to get into the cultural expectation that if there's a program that can help you save even more on electricity, that will help roll that out.

Judge: Echoing your sentiment, there are lots of loads added to grid, and the single most important thing we can do to manage demand. The fact that Eversource doesn't have a program is a concern. The Secretary asked about it, so it's definitely front of mind. Where are managed charging programs and how do we make sure that all utilities are doing something, and ideally, doing something that's somewhat uniform / not wildly divergent?

Rubin: The DPU had encouraged a filing that hasn't come through, and we can't compel the company to file a managed charging program.

Julia Gold: I'm with National Grid. TOU, metering, telematics, managed charging are all related, but not one in the same. If there are ways utilities can better engage with EVICC to build a shared understanding of what those terms mean and address technology limitations, unfortunately we are learning through stakeholder sessions that there are some real technology limitations to work around that don't make it possible to make them available. Understanding these differences will be important for grounding the conversation in what we can and can't do.

Charlie Myers: First, that as the Massachusetts Department of Transportation starts and/or plans Turnpike and other service plaza lease renewals conversation should not be limited to LDV and HD battery electric chargers. Hydrogen infrastructure should be included. At the annual AltWheels event we were told by one major northeast grocer that he had tried battery electric and they did not meet his duty cycle. To go battery electric, he would have to buy two HD trucks for each HD diesel. He was going to go hydrogen fuel cell. As long-haul trucks go hydrogen fuel cell too, without support at our service plazas interstate commerce shipments could be impacted.

Second, as battery electric fleet operators and service plazas look for bubble charging alternatives while the grid infrastructure catches up, there are available modular hydrogen fuel cell megawatt scale power systems that can support these requirements. Available suppliers of these MW scale systems include Plug Power, Ballard, Emvision, General Motors and PowerCell.

7. Adjourn

Rubin motioned to adjourn. Edington seconded. The motion carried. The meeting adjourned at 3:31 p.m.

Respectfully submitted,
Jennifer Haugh
GreenerU