STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

January 31, 2023 - 9:03 a.m.
21 South Fruit Street
Suite 10
Concord, NH

[Hearing also conducted via Webex]

RE: **DE 20-170**
ELECTRIC DISTRIBUTION UTILITIES:
Electric Vehicle Time-of-Use Rates.
(Hearing regarding Eversource's Electric Vehicle Charging Time-of-Use Tariff and Metering Pilot Proposal)

PRESENT: Chairman Daniel C. Goldner, *Presiding*
Commissioner Pradip K. Chattopadhyay

F. Anne Ross, Esq./*PUC Legal Advisor*

Tracey Russo, *Clerk*
Doreen Borden, *PUC Hybrid Hearing Host*

APPEARANCES: **Reptg. Public Service Company of New Hampshire d/b/a Eversource Energy:**
Jessica A. Chiavara, Esq.

Reptg. ChargePoint, Inc.:
Matthew Deal

Court Reporter: Steven E. Patnaude, LCR No. 52

APPEARANCES: ***(C o n t i n u e d)***

Reptg. Dept. of Environmental Services:
Philip W. LaMoreaux

Reptg. New Hampshire Dept. of Energy:
Matthew C. Young, Esq.
Alexandra Ladwig, Esq.
Elizabeth Nixon, Dir./Electric Group
Heidi Lemay, Electric Group
(Regulatory Support Division)

I N D E X

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P R O C E E D I N G

CHAIRMAN GOLDNER: Okay. Good morning, everyone. I'm Chairman Goldner. I'm joined today by Commissioner Chattopadhyay.

We are here this morning for a hearing in Docket DE 20-170. The authority to convene a hearing in this matter is provided by the Commission's ratemaking authority pursuant to RSA Chapters 374 and 378. We are considering a metering pilot and time-of-use tariff proposed by Eversource pursuant to Order Number 26,604, April 7th, 2022, which stated that "Eversource shall develop proposals for a two-period TOU rate for separately-metered EV charging residential customers and a three-period TOU rate for separately-metered EV charging commercial customers, and file those proposed rates with the Commission within 90 days of this Order, together with estimates of costs to implement."

Also, that "Eversource shall develop an alternative metering feasibility assessment pilot proposal and submit it to the Commission within six months of this Order."

Okay. Let's take appearances,

beginning with Eversource.

MS. CHIAVARA: Good morning, Commission. Jessica Chiavara, here on behalf of Public Service Company of New Hampshire, doing business as Eversource Energy.

CHAIRMAN GOLDNER: Okay. And Unitil?

[No indication given.]

CHAIRMAN GOLDNER: No? I know Liberty is not here as well. Clean Energy New Hampshire is not here. ChargePoint?

MR. DEAL: Good morning, Commissioners. Matthew Deal, on behalf of ChargePoint.

CHAIRMAN GOLDNER: Very good. And the Conservation Law Foundation?

[No indication given.]

CHAIRMAN GOLDNER: Okay. City of Lebanon?

[No indication given.]

CHAIRMAN GOLDNER: No? The New Hampshire Department of Environmental Services?

MR. LaMOREAUX: Good morning, Commissioners. Phil LaMoreaux, from New Hampshire DES.

CHAIRMAN GOLDNER: Thank you. The

Office of Consumer Advocate is not here.

And then, the New Hampshire Department of Energy?

MR. YOUNG: Good morning, Commissioners. Matt Young, on behalf of the New Hampshire Department of Energy. With me today is Liz Nixon, who is the Electric Director; Heidi Lemay, who is a utility analyst; and Alexandra Ladwig, who is a new Staff attorney.

CHAIRMAN GOLDNER: Okay. Very good. Did I miss anyone in appearances?

MR. YOUNG: Apologies. We also have Dr. Sanem Sergici, who is participating remotely.

CHAIRMAN GOLDNER: Okay. Okay, very good. Thank you.

All right. Are there any preliminary issues that the parties wish to raise?

MS. CHIAVARA: I guess, as a first matter, sure. I brought quite a crew with me today. We brought a number of business groups to speak to these proposals. And, if it pleases the Commission, we'd like to do a bit of direct exam, just to discuss some of the items that didn't really get to be discussed at the original

hearings, if that's all right?

CHAIRMAN GOLDNER: Okay. That would be perfect. Should we begin with a swearing in of the witnesses, and then you can begin with your direct?

MS. CHIAVARA: Sure.

CHAIRMAN GOLDNER: Okay.

MS. CHIAVARA: Thank you.

MR. YOUNG: Mr. Chairman?

CHAIRMAN GOLDNER: Yes.

MR. YOUNG: I would just like to note, too, that Dr. Sergici is only available to participate until 11:00 today.

CHAIRMAN GOLDNER: All right. So, that may present some skipping around. But we -- please remind me, if we get close to 11:00, because we do have a few questions for her. So, if we don't get to Dr. Sergici by, say, 10:30, we can -- maybe we'll flip over and then flip back. Thank you for the heads up.

Okay. Very good. Let's begin with the swearing in of the Eversource witnesses.

(Brief off-the-record discussion regarding swearing in all of the

witnesses at once, including Dr. Sergici.)

(Whereupon ***Edward A. Davis***, ***Kevin Boughan***, ***Lisa Carloni***, ***Dennis E. Moore***, ***Amy Findlay***, ***Jason Valente***, ***Helen Gagnon***, and ***Sanem I. Sergici*** were duly sworn by the Court Reporter.)

CHAIRMAN GOLDNER: Okay. Very good. Then, we'll begin with direct from Eversource, and Attorney Chiavara.

MS. CHIAVARA: Thank you, Chair Goldner.

EDWARD A. DAVIS, SWORN

KEVIN BOUGHAN, SWORN

LISA CARLONI, SWORN

DENNIS E. MOORE, SWORN

AMY FINDLAY, SWORN

JASON VALENTE, SWORN

HELEN GAGNON, SWORN

DIRECT EXAMINATION

BY MS. CHIAVARA:

Q First, to get acquainted with everybody we have here today, starting with Mr. Ed Davis.

Mr. Davis, will you please state your name and the title of your role at Eversource?

A (Davis) My name is Edward Davis. My position is Director of Rates for Eversource Energy Service Company.

Q And what are the responsibilities of your role with Eversource?

A (Davis) I provide rate and tariff-related support and service to the operating companies of Eversource Energy, including Public Service of New Hampshire.

Q And have you ever testified before this Commission?

A (Davis) Yes, I have.

Q And to what will you be testifying here today?

A (Davis) Today, I'll be supporting the tariff provisions and the separately-metered residential and commercial electric vehicle time-of-use rate designs that the Company submitted in our filing that we made on July 7th, 2022, that's marked as "Exhibit 36". I was responsible for the creation and development of the tariff provisions and the rate design, and can also answer Commissioner questions on those issues.

Q Thank you very much. Moving next to Mr. Kevin Boughan. Mr. Boughan, will you state your name and your role at Eversource?

A (Boughan) My name is Kevin Boughan. My position is Manager, Research and Business Development, at Eversource Energy Service Company. And, in that position, I provide service to the operating companies of Eversource Energy, including the Company.

Q And what are the responsibilities of your role at Eversource?

A (Boughan) I'm responsible for development strategies, including the development of EV charging programs across all Eversource Energy affiliates, including Public Service Company of New Hampshire.

Q And have you testified before this Commission?

A (Boughan) Yes, I have.

Q And what will you be here testifying to today?

A (Boughan) Today, I'm supporting the design of Eversource's Electric Vehicle Supply Equipment Pilot Program proposal made on October 7, 2022, which is marked as "Exhibit 37", as I was directly involved with and supervised the

development of that proposal. I can also answer questions from the Commission on EVSE and other EV-related issues.

Q Thank you very much. Moving up to the witness box, to Ms. Lisa Carloni.

Ms. Carloni, will you please state your name and the title of your roll at Eversource?

A (Carloni) Yes. My name is Lisa Carloni. I am the Director of Billing, Payments, and Meter Data, at Eversource Energy Service Company.

Q And what are the responsibilities of your role at Eversource?

A (Carloni) I'm responsible for the billing, payments, and meter data collection systems across all Eversource affiliates, including Public Service Company of New Hampshire.

Q And have you testified before this Commission before?

A (Carloni) No, I have not.

Q And what will you be testifying to here today?

A (Carloni) I'm here to speak to the manual billing costs, the estimate for the three-period EV TOU rate, represented in the proposals marked as "Exhibit 36", and to answer any Commissioner

questions that would involve billing or meter data operations.

Q Thank you very much. Moving next to Mr. Dennis Moore.

Mr. Moore, would you please state your name and the title of your role with Eversource?

A (Moore) My name is Dennis Moore. I'm the IT Director of IT Enterprise Business Solutions, at Eversource Energy.

Q And what are the responsibilities of your role at Eversource?

A (Moore) I've worked for Eversource for 23 years developing, implementing, and maintaining enterprise business solutions required for our systems.

Q And have you testified before this Commission?

A (Moore) Yes, I have.

Q And what will you be testifying to today?

A (Moore) I was directly involved in developing the cost estimates and level of effort of IT work required to modify our systems to implement the EV rates. I can answer questions from the Commission today regarding that level of effort cost and time required to do so.

Q Thank you very much. Moving back to my folks here at the table, Ms. Amy Findlay.

Ms. Findlay, will you please state your name and the title of your role at Eversource?

A (Findlay) My name is Amy Findlay. I manage demand response programs at Eversource.

Q And the responsibilities of your role at Eversource?

A (Findlay) I oversee demand response and manage charging programs for residential and commercial customers.

Q And have you testified before this Commission?

A (Findlay) No, I have not.

Q And what will you be testifying here today?

A (Findlay) I'll be supporting the design of Eversource's EVSE Pilot Program. The proposal was made on October 27th -- or, October 7th, 2022, and marked as "Exhibit 37". I was directly involved with the development of that proposal, and I can also answer questions from the Commission on EV data management.

Q Fantastic. Thanks very much. Moving back up to the witness box, Mr. Jason Valente.

Mr. Valente, will you please state your

name and the title of your role with Eversource?
A (Valente) My name is Jason Valente. And I am the Manager of Electric Meter Operations, for Public Service Company of New Hampshire.
Q And what are the responsibilities of your role at Eversource?
A (Valente) I am responsible for overseeing the team of meter mechanics, specialists, and foremen who install, exchange, and test electric meters in New Hampshire. I'm also responsible for ordering electric meters for Public Service Company of New Hampshire.
Q Thank you. Have ever testified before this Commission?
A (Valente) No, I have not.
Q And what will you be testifying to here today?
A (Valente) I'm here to speak to customer costs implicated by the implementation of EV time-of-use rates represented in the proposals marked as "Exhibit 36", and to answer any Commissioner questions that would involve meter operations.
Q Thank you very much. And then, finally, to Ms. Helen Gagnon.

Ms. Gagnon, will you please state your name and the title of your role with Eversource?

A (Gagnon) I'm Helen Gagnon. And I'm an IT Regulatory Supervisor in IT Business Customer Group, at Eversource Energy Company.

Q And what are the responsibilities of your role at Eversource?

A (Gagnon) I've worked in IT for 25 years. And I'm responsible for helping develop, implement, and maintaining our billing system.

Q And have you ever testified before this Commission?

A (Gagnon) No.

Q And what will you be testifying to here today?

A (Gagnon) Like Dennis, I was involved with the development of the cost estimates. And I'm familiar with IT work that would be required to modify the billing system and to implement the rate. And I can answer questions from the Commission regarding the level of effort from IT.

Q Fantastic. Thank you all. And my first question is for Mr. Moore and Ms. Gagnon.

Could you please explain how the

Company arrived at the IT costs for implementing each of the rate proposals?

A (Moore) Yes. For residential rates, the Company first provided estimates as in record Exhibit 33, after the January 2022 hearings. For this two-period residential Time-of-Use EV rate, we first scope out the metering, billing, and downstream reporting requirements, and working with our Rate Department, our Billing Department, and our IT Technical team.

The billing systems changes to support the billing calculation, the billing presentation, downstream system changes, were estimated by the IT Technical team. Rate R-EV was estimated to automatically bill using two-period scaler meters, and included only -- included off- and on-peak kWh and Eversource company supplied energy, only based on the rate design.

Next, the IT cost estimates are entered in a standard project management methodology for capital projects. This Capital Project Estimation Worksheet used by Eversource estimates the project's resources that are required,

project timeline, and project warranty periods and contingency.

On the commercial order, 26,607, directed that Eversource implement a three-part commercial time-of-use rate, consistent with the rate design and methodology used by Unitil and Liberty Settlement in this docket. This three-period commercial EV Time-of-Use, EV-1, the same IT process and capital methodology I explained earlier was used to scope out that work.

IT Technical estimates and capital project estimation, as well as estimating the manual bill changes to support the manual data entry of the three-period, and to capture manually of the interval metered time-of-use rate. Three-part time-of-use values were entered into a manual spreadsheet for billing calculations and billing presentment. Core billing systems changes are required to support manual billing, as core billing systems provide company usage and revenue dollars downstream, and for revenue reporting and load settlement processes.

Q Thank you very much. Turning to Ms. Carloni, since the Company previously discussed during the hearings last year in this docket, we discussed the $600,000 estimate for the residential Time-of-Use rate. Could you take a moment to focus in and explain on how the Company arrived at the billing costs for the manually billed commercial Time-of-Use rate?

A (Carloni) Yes. For the commercial three-period TOU rate for EV customers, the estimate for manual billing was developed by including all the necessary steps in the billing process, and also accounting for the system enhancement just mentioned by IT needed to post associated usage and revenue. Posting the usage and revenue are required for financial, load settlement, and regulatory reporting, in addition to recording and tracking customer payments due to the Company.

The system enhancement work I just described is estimated at $500,000, and is required to implement the necessary functionality for the Company's enterprise billing system, C2, to accommodate a manually billed rate.

The basis of the estimate for this work used Eversource's manual billing experience across its operating companies, including New Hampshire. However, no Eversource operating company to date offers an entirely manually billed EV three-part time-of-use rate.

Because this is an entirely new and more complex rate, I want to emphasize the fact that the estimates are subject to change. We did our best using the expertise and experience, but will obviously change to a certain extent when we implement, and once we start actually doing the billing and tracking.

Q Thank you. Ms. Carloni, the Department of Energy mentioned in its closing statement after last year's hearing, and it was using a discovery response that was provided by the Company, that "Eversource currently uses manual billing in New Hampshire for 63 large power billing accounts at a cost of approximately $6,000 per year for all 63 customers, or less than $100 per year per customer." That is from the DOE closing statement on Page 7.

Is this calculation, is that analogous

for how to calculate the costs to provide the manually billed three-period commercial Time-of-Use rate?

A (Carloni) No. This is not accurate, as the calculation was taken out of context. The cost and effort for serving the existing 63 customers had some degree of intervention. But it's not comparable to what is required to set up, implement, and bill a novel and entirely manual rate. The Department took only ongoing costs for providing manual intervention in the automated billing process, rather than complete manual billing, which I'll discuss in a moment.

But the calculation is based only on the overlook -- the ongoing costs overlook the lion's share of the overall costs, which is the initial implementation.

The complex and billing a new rate is a fully manual process, and that was not provided for in that proceeding. And manual billing needs further explanation and clarification. It can represent different processes and levels of effort. The term "manual billing" can apply to "complete manual billing", as it does with the

commercial Time-of-Use rate, or "manual intervention" of billing system processes, which is what Eversource was referring to in its response to the discovery that the DOE used as a reference for its calculations.

"Complete manual billing" is when an account is billed completely outside of the Company's billing systems, so either C2 or New Hampshire large power billing. "Manual intervention billing" is when an account is billed within the automated C2 or New Hampshire large power billing systems, but with additional manual intervention that is caused by certain circumstances beyond the capabilities of the system. With manual intervention, automated processes handle the majority of the billing.

Examples of manual intervention can be to hold a bill to verify the supply status, banking kWh on certain rates, and monitoring thresholds on monthly credits, and calculating unique billing determinants.

"Complete manual billing" is quite different. With complete manual billing, all steps, from the receipt of the billing

determinants from the meters, to calculating the bill, including usage and revenue reporting, quality control, virtually everything included in the billing, right through the printing and mailing, are manual processes. This is an entirely different effort, and is a considerable undertaking.

I'd also like to point out that, generally, the Company disfavors manual billing. And there are numerous reasons why we try to avoid it, primarily on the customer's behalf. The customer's experience is negatively impacted and put at risk in a variety of ways. This includes the customer cannot view their bills online. They must receive a paper bill, not electronic. They will have limited payment options, likely they can only pay by check. The bill is spreadsheet-based. So, it does not look like the existing Eversource bills, which can cause confusion for customers. There are a greater chance of billing errors due to manual data entry. There is a need for manually interfacing with the credit system, to get overdue notices, *et cetera*, an added manual

effort. All customer options, such as budget billing or payment plans, are not available. No bill inserts and limited messaging capability. The timing of the manual monthly bills may not be consistent from month-to-month, as it would be with the automated billing cycle process.

So, I would recommend that these considerations be taken into account, before implementing a completely manually billed rate.

Q I appreciate that extra context. Thank you very much.

This question is for both Ms. Carloni and Ms. Findlay. If the Commission were to find that the cost estimates provided to implement these rates were unacceptable, does this mean that the Commission should adopt the recommendation in DOE's closing statement that the Commission should "direct Eversource to work with NH DOE, OCA, and other parties to develop and issue an RFP for a third party to provide billing and metering services utilizing charger-embedded metering or vehicle telemetry"?

A (Carloni) We wouldn't recommend that approach. This suggestion does not take into account that

an RFP to contract out for metering and billing services does not comprise the entire customer experience, many of the aspects I just described. And it could not be quickly or inexpensively integrated with the Eversource systems.

The customer experience starts with moving to a new address or adding a second account. Everything up to the customer paying their bill, as well as any customer service inquiries related to billing. Just some of the steps in the cycle are, as I mentioned, setting up the new account, getting the meter set, meter readings, meter read verification, accounting for misreads, the actual or estimated billing, billing controls, composing in either print or mail or emailing bills, and, finally, payment and payment processing.

Eversource has a Call Center necessary to answer customer billing questions or payment questions. Eversource maintains the meters and the billing systems as part of a network that comprises this customer experience.

Eversource just completed an RFP for clean energy services. But the RFP approach

would not be a faster option than the approach described in the Commercial Time-of-Use Rate proposal in Exhibit 36. To use a vendor retained through an RFP process would require complete system integration before the vendor could bill on behalf of Eversource.

There are also annual costs associated with these services. And it's likely these annual fees would exceed the 500,000 one-time investment Eversource would have to make to implement the commercial Time-of-Use rate.

With any vendor, the design of the brand-new processes required, and that would include develop -- and the process would include developing modified roles and responsibilities, and training staff to account for this third party intervention.

CHAIRMAN GOLDNER: Ms. Chiavara, if I could just interject. We need to speed up a little bit. I'm not sure I'm gaining much new knowledge from this line of questioning.

If we could maybe get to the critical pieces, and so we can move along?

MS. CHIAVARA: Yes. We're going to

shift to the EVSE Pilot, which I don't think has really gotten much description at all.

CHAIRMAN GOLDNER: Thank you.

MS. CHIAVARA: And then, we will wrap up very shortly after that.

CHAIRMAN GOLDNER: Thank you.

BY MS. CHIAVARA:

Q Ms. Findlay, was there anything that you wanted to add regarding third party data services?

A (Findlay) Yes. There's just one more thing, and I think that it's relevant to the EVSE Pilot discussion as well.

So, there's just issues with the quality of the data and the untested nature of the equipment and software available at this time. That would be a barrier to the RFP approach as well.

Billing-quality meter data is required, and EVSE data is untested for that purpose at this time. Manufacturers don't guarantee that their data can be used for billing. And across manufacturers, there aren't standardized metrics, measurements, or data provisions, all of which are needed to provide accurate billing-quality

data.

Currently, EVSE data is only used to run customer incentive programs, and those have less stringent time requirements, which means that the data is completely untested for billing purposes.

Usually, we'll use the data once a year to calculate participation in our DR managed charging programs. But that constant data-gathering and use for billing purposes is an entirely different sort of use case.

In addition to the collection of the data, not all EVSE manufacturers even make that 15-minute telemetry data available. And, from our experience, there can also be gaps that occur, when you're working with the individual manufacturers to try and backfill that data. It's just a high chance of mistake, that we don't recommend using it for billing purposes.

Q Thank you very much. So, to move to the EVSE Pilot Proposal. Mr. Boughan, can you describe the reasons for the selected design, and whether any alternative designs were considered?

A (Boughan) Yes, I can. Based on the party

positions throughout the course of the docket, and the conditional approval of Unitil's alternative metering pilot in the Settlement Agreement in this docket, the Pilot was modeled after the Unitil proposal.

So, like the Unitil proposal, the Pilot is designed to determine the technical and practical feasibility of utilizing metering embedded in electric vehicle supply equipment, and metering embedded in electric vehicles themselves, for the purposes of offering EV-only time-of-use rates to residential customers.

By evaluating the charging session data accuracy, data availability, and data security of the data provided by meters embedded in EVSE and select EVs, compared with revenue-grade utility interval meters.

So, in order to implement this Pilot, we need to have customers on a separately-metered rate to get a direct side-by-side comparison of the data, from a utility-grade meter to data in the embedded non-utility meters. So, Eversource would have to have the residential time-of-use rate available prior to launching the Pilot.

However, Eversource could begin preparations for the Pilot simultaneously with the implementation of the rate to expedite the launch once the rate is available, and should customers enroll in the rate.

Given the purpose and scope of the Pilot, there aren't many alternatives to consider, if you want to have a meaningful and reliable data analysis. So, installing a separately-metered service without the associated TOU rate would only serve to collect data, without providing the relevant service or rate, which is kind of unnecessary customer spending. And, without a separately-metered service, there's nothing to compare the embedded meter or EV telematics to. So, the separate service is also a necessary piece.

MS. CHIAVARA: Thank you. I was going to have Ms. Findlay and Mr. Boughan address in more detail the costs. But, in the interest of time, I will -- if the Commissioners have questions about the details of costs, I will leave it to you to ask those questions.

BY MS. CHIAVARA:

Q So, Mr. Boughan, do you see any barriers to the Pilot getting off the ground?

A (Boughan) I do. As I mentioned, the Pilot requires a minimum of 50 customers to enroll in the residential EV Time-of-Use rate, because they will have to be on a separately-meter service, so that the EVSE data can be accurately compared to utility meter data, as I mentioned previously.

So, I think getting even 50 customers to enroll in a residential time-of-use rate seems a high barrier, given the efforts and costs on the customer side to enroll in the rate, likely outweigh the nominal savings to the customer, even if the customer charges predominantly off peak.

Q Okay. Thank you very much. And just one final question, and this for Mr. Valente.

Are there any other costs that would need to be covered by customers that aren't included in either the EV TOU rates or the EVSE Pilot proposals?

A (Valente) Yes, there are. First, I'd like to mention that the supply change issues has severely affected the availability of meters

required to place customers on these rates. Currently, there's close to a one-year lead time on ordering this type of meter.

But, regarding costs to install a separately-metered service, the customer would need to hire an electrician to install a second service on their home that only serves the EV charger. The costs for an electrician vary pretty widely throughout the state, and electrical supplies are also being impacted by the tightened supply chain. And this would affect both availability and cost.

The impact of this is that there would be delays for both enrolling in the rate, and also if the customer decided to unenroll from the separately-metered service.

MS. CHIAVARA: Thank you very much. That is all I have for direct exam.

CHAIRMAN GOLDNER: Thank you. So, let's move to each of the parties to see if they have any questions, beginning with ChargePoint?

MR. DEAL: No questions.

CHAIRMAN GOLDNER: Okay. Thank you. Does the New Hampshire Department of

Environmental Services have any questions?

MR. LaMOREAUX: No questions, sir. Thank you.

CHAIRMAN GOLDNER: Thank you. And we'll move to the New Hampshire Department of Energy?

MR. YOUNG: No questions from the Department of Energy.

CHAIRMAN GOLDNER: Okay. Let's move to Commissioner questions, beginning with Commissioner Chattopadhyay.

CMSR. CHATTOPADHYAY: Good morning.

So, I have several lines of questioning here. So, and I might move between the Eversource witnesses, as well as the DOE witness, if that seems appropriate, in terms of just talking about one specific issue or aspect.

CHAIRMAN GOLDNER: Are the parties okay if we move between witnesses?

MS. CHIAVARA: I have no problem with that.

MR. YOUNG: No objection.

CMSR. CHATTOPADHYAY: No issues?

CHAIRMAN GOLDNER: No issues. Okay.

Very good. Thank you.

I don't see Dr. Sergici, I hope I'm pronouncing that right, on the screen. There we go. Okay.

Also, I think the doctor was not on the screen when we swore her in. So, if we could do that again, Mr. Patnaude, that would be appropriate.

(Whereupon, for completeness of the record, ***Sanem I. Sergici*** was duly sworn by the Court Reporter.)

CMSR. CHATTOPADHYAY: So, the first question I have is for the Company, and whoever is more familiar with the topic, please feel free to respond.

BY CMSR. CHATTOPADHYAY:

Q Just a question I have is, do we absolutely need the utility metering embedded in chargers and vehicles for the purpose of availing time-varying rates?

A (Davis) Commissioner, could you please repeat the question?

Q Do we absolutely need utility metering embedded in chargers and vehicles for the purpose of

availing time-varying rates?
A (Boughan) So, just to be clear, the meters that are in the electric vehicles or in the electric vehicle -- the EVSE, are not utility meters.
Q Okay. Good. I'm just -- so, I can assume then that some of the Eversource's existing residential customers have EVSE already?
A (Boughan) They have chargers in their garages, yes.
Q It's just that it's not -- they don't have TOU rates?
A (Boughan) We currently have not implemented an EV-specific time-of-use rate.
Q EV-specific. So, but they do have those. Okay.
A (Davis) Could I add that --
Q Please. Please do.
A (Davis) -- we do have whole house generally available.
Q Understood. Yes.
A (Davis) Okay. Just to --
Q So, they might be -- yes, they might have the whole house TOU rates, they may also have the chargers embedded. But you would -- would the utility know what is coming from the vehicle or

not?

A (Davis) We would -- we would know what their whole house load is. We wouldn't be able to distinguish that load from our utility meters.

Q Okay. The metering infrastructure that we are talking about here, so it would be maybe -- just give me a little bit more sort of clarity. So, the utility ends up installing them. Please summarize what exactly that metering will do, in terms of making sure that you have the data? And why -- is it possible that the other providers, they already have such meters there, or that's not even possible?

And I'm not an engineer. As an economist, I'm trying to ask these questions.

A (Boughan) Yes. So, let me just try and step back and explain what's being measured and how it's being measured. Right?

So, a customer charging their EV in their garage would be drawing electricity from the distribution system. The non-utility meter in the charger measures how much -- how many kilowatt-hours are going to the vehicle. Similarly, many vehicles have such measurement

devices within them. Absent the utility receiving that data, we don't have a line of sight to that disaggregated load.

Q Right.

A (Boughan) So, we only know the kilowatt-hours that are going to the property. But not necessarily the number of hours that are going to a specific appliance, in the case of the charger.

So, we could -- we do have messaging protocols in other jurisdictions, where we do receive data from the charger, and then, in some cases, from the vehicle. The issue that we would be testing in the Pilot is whether that data is reliable and accurate, compared with the utility-grade meter.

Q Have you done that kind of analysis in other jurisdictions already?

A (Boughan) No.

Q So, the real question then is, for you, as the utility, even though there is some sort of a meter embedded in those chargers or the vehicle, you're not sure whether the measurements there is of the quality that you are satisfied with it?

A (Boughan) To be able to accurately and safely

bill the customer, correct.
Q And, if, I think you suggested this, that there is telemetry that allows you to receive some of that data. But, even then, you're not sure whether the quality is good enough?
A (Boughan) Yes.
Q Is that what this is about?
A (Boughan) Yes. Ms. Findlay can speak more to the data accuracy.
Q Please.
A (Findlay) Yes. So, that's what I had sort of alluded to before, that the -- first off, not all manufacturers of the chargers or the telematics enable us to have that visibility into how charging is happening. So, it's all, you know, "do they make that data available for us?" That's sort of the first barrier. So, there's only select makes of vehicles that allow you to access that telemetry. There's only select charger manufacturers that make that data available.

But, even so, to Kevin's point, we have not tested the quality of that data. I just know, from my experience in working with it, both

on the telematics side and both on the charger side as well, that it's not coming in in a consistent quality format. So, I think that that was -- my understanding is the purpose of this Pilot was to see if that was feasible to use that to bill off of. But, from my experience in working with it, my first assessment would be that it's not.

Q So, if someone who is on EVSE currently, and you have the TOU rates approved, they have some sort of a metering capability that is not owned by the utility, to allow them to know how much they're drawing from the whole house, you know, that can get a sense of how much is going into the car. But they can -- but they would still need another meter to satisfy you, correct?

A (Boughan) To implement the EV-specific time-of-use rate, we would need a separate utility-grade meter on a separate service, yes.

Q Okay. So, as we are on the issue of TOU rates somewhat, I would like the DOE to provide some opinion on its position on the estimated cost of $600,000 for implementing the TOU rates?

And, you know, however you want to do

it, you know, you can --

MR. YOUNG: I think I would prefer that Dr. Sergici chime in on this.

CMSR. CHATTOPADHYAY: Sure.

SANEM I. SERGICI, SWORN

BY THE WITNESS:

A (Sergici) Yes. I mean, I really don't consider myself as an expert on, you know, billing systems or metering configurations. I'm an economist. But, to the extent that, in my work with my utility clients, I know that it is rare for these kinds of rates to be billed manually.

And, again, my personal opinion is this number strikes me as high. But, again, as I started my speech, I don't consider myself an expert in the billing cost estimates, Commissioner.

BY CMSR. CHATTOPADHYAY:

Q Do you have anything to add on the tariff that the Company has proposed? So, for example, for the residential rates, talk about the customer charge, the volumetric rates, *et cetera*, just give me an overall sense of where the DOE is?

A (Sergici) Yes. So, we reviewed the Company's

proposed TOU rates, and they are generally consistent with the principles that we've suggested and, I think, agreed to in the Settlement Agreement. So, they, you know, follow good economics principles. They have a reasonable price signal. So that, you know, when the customers are exposed to these price signals, they would be motivated to shift load from peak to off-peak periods.

So, in terms of the design of the rates, we do not have any concerns.

Q Thank you. Going back to the Company, maybe I wasn't 100 percent clear on this. So, you were talking about the manual, you know, commercial rates, and you've mentioned something like "$500,000". That is separate from the $600,000 that appears, so --

A *(Witness Carloni indicating in the affirmative).*

Q Okay. I just wanted to make sure. And the $600,000 is purely for the residential customers?

A *(Witness Moore indicating in the affirmative).*

Q Thanks.

CHAIRMAN GOLDNER: If you could verbalize your reply? The nodding doesn't help

the stenographer.

BY THE WITNESS:

A (Moore) Yes.

CMSR. CHATTOPADHYAY: Thanks.

CHAIRMAN GOLDNER: That was a "yes", Mr. Patnaude.

CMSR. CHATTOPADHYAY: That works when I talk to my wife.

[Laughter.]

CMSR. CHATTOPADHYAY: Not.

[Laughter.]

BY CMSR. CHATTOPADHYAY:

Q How did you come up with the $400,000 number for the consultancy fee? Can you give me a better sense?

A (Boughan) Yes. So, admittedly, that is a very high-level estimate based on the scope and the duration of what the consultant would be asked to do in the Pilot. If we did -- if we were directed to implement the Pilot as proposed, we would issue a competitive RFP to get the most accurate cost. So, to be clear, we're not, in the proposal, asking for a pre-authorized amount for a consultant. It was just a good faith

estimate as to what the costs might be.
Q Can the utility itself do some of that work?
A (Findlay) Yes, we can. I think, to build off of Kevin's point, the estimates that we put in there were sort of based on the timeline and the length of the Pilot as well. So, we figured that we would need maybe six months to a year in order to recruit customers. And we want a year's worth of metering data to analyze. So, we're talking about someone, you know, who is engaged to sort of work through every aspect of this Pilot over the course of two years. So, that was where the estimates of $400,000 came from.
Q I was also a bit confused on the discussion about the third party, you know, provider, I'm not sure exactly what I would call that, with respect to the commercial rates. There was some discussion about that may -- that wouldn't be the right approach per the Company's view.

But, in this case, you are talking about a third party, you know, sort of provider for the EVSE -- sorry, for the Pilots. So, I'm just -- I'm a little confused as to why in one case it's okay, and it's not okay in the other

one?

A (Boughan) Well, to be clear, in the Pilot, the third party would not be doing the billing. In our Pilot, the third party would be directing the aspects of the Pilot, including recruiting data analysis, comparing the data to the meters and our -- to the data from our meters.

I can pass it to Lisa to explain what the third party -- what the proposed third party role would be in the case of the commercial Time-of-Use rate.

Q Please do.

A (Carloni) Yes. So, the discussion that I was following up on was about "Are we better off hiring a third party to do this billing and metering?", that we're saying takes time and may be expensive.

And having done and completed an RFP, we know for a fact that there are limitations on what the third parties can do. But, in order to serve our customers and offer all the services that we offer, it has to be integrated into our current process. So, our current process, we have meter data systems that read our meters, and

then feed the data into the billing system. And then, the bills are produced, all the way through printing, and, you know, we have the payment options, *et cetera*, *et cetera*, and the Call Center.

If you're introducing a third party, they have to -- we have to do IT work, so that they could be part of that same process that we currently have, so that we could -- otherwise, we'd be doing manual billing, similar to what we already said, with all the constraints associated with that.

But the goal would be to, you know, even if we did bring in a vendor, is to integrate them into the full process, so they get all the benefits of all the investments already made in the services that we offer.

Q The issue of doing something completely manual, as opposed to manual intervention, you discussed quite a bit about that. So, should I assume that you took the order from the Commission to mean that "when you go for the commercial rate, it's going to be entirely manual"? Or, you were simply -- that is -- that is a way to do it,

there is no way to tag onto the manual intervention approach that you have, and to still be able to have three-period TOU, that might lead to lower costs?

So, I just -- I'd want you to respond to that.

A (Carloni) So, when we have manual intervention, it's based on a change to something that's already in our system. So, the rate's already built in our system. And then, we might be told "Well, make this change for these types of customers", or there might be a special contract for one customer, and you have to discount a piece of the rate. Or, if there's a supplier, if the customer goes to a supplier, and they're not supposed to get certain benefits when they're on a third party supplier, the intervention is "Stop and look. And are they on a third party supplier or are they on an Eversource service?" So, those are the types of things, but the rate's already in the system. It's already been built in the system. And we don't have a third party -- I mean, three-period time-of-use rates in the system that we could, you know, make manual

intervention to.

Does that make sense?

Q Yes. I think I understand why the third party thing for the two have been addressed differently. So, thank you for the clarity.

So, let me just go to the issue of -- so, you talk about analyzing data from 200 customers. Is there a minimum as well that you would rely on? So, like, you would at least need these many -- information from at least these many customers that would help you come to informed, you know, decisions?

A (Boughan) Yes. I think we've suggested an enrollment of 100 customers to get the most complete dataset, because we are testing two different things, both the meters in the EVSE and meters in the telematics of certain vehicles. So, we really have two different customer groups that we'd be testing. I think, at minimum, of 50 customers to begin the Pilot would give us a less complete dataset than 100. I think "100" was our, you know, kind of baseline to get a good idea of -- to have enough data to make informed decisions going forward.

A (Carloni) And if I may? Even if the data was good quality, then we'd need to find a way to integrate that to our current systems. Because right now we have AMR, Automated Meter Reading, where the vans drive around and pick up reads, or we have our MV90 system, which calls our interval meters via cellular and brings the data back. And then, there's an automatic flow, you know, there's editing, validation, and then there's a flow into our billing systems. And we do have a system that could take the data coming from that program and automatically put it in our system. So, it would either be manual, or we'd have to build a new process to be able to bill that through the normal systems that we have.

Q Can you give me a sense of what's the reason behind 35/65, for telematics and 65 for EVSE? And assume that I know nothing about these technologies. And give me a sense also, I think you mentioned that some customers will need this, the others -- the others the other.

So, I wasn't -- it's not very clear to me whether there could be customers that use both at the same time. And, so, just give me a, you

know, 101 explanation as to what's going on?
A (Findlay) I can answer the first part about the breakdown, was based on adoption that we've seen in our Connecticut program, where about 30 percent of the customers who have enrolled have been through vehicle telematics, where the other 70 percent have been through a charger. So, we just sort of did a similar split with the 100 customers that we want in the Pilot.
A (Boughan) And, to be clear, that's our Connecticut Demand Response Programming.
Q So, can you, however, address the other point, which is --
A (Boughan) Sure.
Q -- it's not clear to me, like, are they mutually exclusive?
A (Boughan) So, you know, --
Q You know, just give me a sense.
A (Boughan) -- it depends. So, not every model of electric vehicle has the capability to do telematics. So, it would -- there is a chance that a customer who has an EVSE with an embedded meter also has a vehicle with telematics. But we don't have data to support how many customers in

New Hampshire might have one or another, or both.
Q And why would -- why would an interested customer choose just one of them and not go for both?
A (Findlay) So, I think it's unlikely that both would be an option, just based on the makes of vehicles that are enrolling via telematics, don't necessarily have the chargers that we could connect to the meter.
Q Okay.
A (Findlay) There could be some overlap potentially, but it's not going to be the majority.
Q Okay. So, given that you are giving incentives, $100 and, if I remember, $500 for the other one, these are -- and as I hear it, you're not too optimistic about the number of customers that will be interested, and I may be wrong in inferring that. But, given that you have, let's say, just 100 customers, and given that you have provided incentives, how do you make sure that you have a sample that is random enough or is representative of the Eversource New Hampshire, you know, territory to make sense of the information that comes out of it?

So, are you relying on your own ability to make sure that the samples -- sample is good enough, or you're going to rely on the third party to -- or, you're going to give them instructions to make sure that the analytics is good?

A (Boughan) Yes. That would be part of the role of the third party who would administer the Pilot, is to ensure that the enrollment is such that the data that we would be collecting would be valid for making decisions going forward.

Q Have you done anything like that in the other jurisdictions already?

A (Boughan) So, we haven't run a similar pilot in any of our other jurisdictions, no.

Q Do you know anything about, not necessarily Eversource territory, but other regions where it might have been done already?

A (Boughan) I don't know enough about the way any other pilots in other jurisdictions are run to make an informed comment on it.

Q When you go for the RFP on the third party administrator, have you thought through the screening criteria? Do you have anything in mind

that you usually follow? And just give us a sense.

A (Findlay) Yes. So, I think we don't necessarily see this Pilot being completely outsourced to a third party without really close oversight from internal Eversource employees that have experience in working with this data.

So, I think that I just wanted to -- wanted to level set that it's not going to be sort of a hand-off and, you know, not monitor the progress and not make sure that, you know, we've got certain criteria set, to your earlier point, about having, you know, maybe there's some specific targets by charger type or by vehicle type, so we have a more representative sample, rather than it just being sort of weighted sort of one type of charger, one type of vehicle.

Q So, when do you expect, you know, the study that you're conducting in the other jurisdiction be done?

A (Findlay) So, it's actually not a study, it's ongoing programs that we have. We have a very robust offering in Connecticut for our EV programs, through both chargers and telematics,

that's connected with our make-ready program. It has a managed charging element to it as well. In Massachusetts, we have demand response offerings for EVs.

So, this is a very unique sort of ask that we would be doing for this Pilot. But we can leverage the learnings that we have from the other jurisdictions, and some of the platforms and tools that we use there, to help administer this as well.

Q Is the other also a pilot, the other system?

A (Findlay) No. They are fully approved programs in the grid mod. docket in Connecticut.

Q And when do you have sufficient information, like analyticswise, derived from that?

A (Findlay) We do not. Just --

Q No, I'm saying, like --

A (Findlay) Oh.

Q -- when do you expect it would be there?

A (Findlay) Well, we don't have the separately-metered EV, I think that's maybe what you're referring to. Is that all of our programs are still -- they're incentivized in a different way. It's not through a rate. It's more of a

managed charging program, where we offer sort of ongoing incentives. But we don't have a specifically meter -- like, a specific service to meter the EV directly, which is what this Pilot would be testing out. So, to the point that was made earlier, these residential customers are still on a whole house meter, and that's really the only level of visibility that we have into usage, aside from the data that's coming from the charger or the vehicle itself. But we can't disaggregate that at the meter level to be able to tell how much is being used by the vehicle.

A (Boughan) And I'll just add, in Connecticut and Massachusetts, we're not -- while we receive information on the kilowatt-hours being used, we're not using that information to bill, and we're not using that information to incent. It's really, we just look at the time the charger was plugged in, and whether it was on or off during one of our demand response calls.

Q Going back to something I may have asked, but I sort of probably didn't do it in this way. So, you answered that some of the customers already have EVSE, of course, not TOU. Would you know

who these customers are?
A (Findlay) Working with the manufacturers, we would be able to identify them. And I think that gets to some strategic targeting for customers who we would want to reach out to first about this Pilot. Because there's sort of two steps, you know, in getting a customer to participate. They have to have the proper meter installed and they have to have a charger installed. So, if you go back to customers who you know already have the charger, it's an easier ask to just get them to take that next step to install the meter.
Q But there is no way for you to know without going to the manufacturers?
A (Findlay) Correct.
Q Right? And, right now, you cannot tell whether somebody is on EVSE or not?
A (Findlay) Correct.
Q Right? Okay. Some basic questions for me. Like, what do you mean by "telematics"? Just try and answer that.
A (Findlay) So, that's like the directed vehicle connection that we wouldn't have to connect to the charger to get the data about how the car is

charging. We can sort of connect to the brains of the vehicle and the vehicle can give you that information.

Q So, is that the reason why, if you have that, then you really don't need to have a meter, because you will get all of the information from it?

A (Findlay) That's right. That's why we have the two different offerings. The telematics piece would test out just the direct connection to the brains of the vehicle, and then the charger piece would test the actual charger data.

Q Okay. Tell me what is "telematics DERMS fees", or "DERMS fees"? I have no idea what that is.

A (Findlay) Yes. So, that's a fair question. So, that's "Distributed Energy Resource Management", that's the platform that the manufacturers connect to, for both access to the data and for managed charging programs for actually doing the control of the vehicle. So, that's how we communicate with the vehicle, sort of that two-way.

Q And this can be, I'm not sure who's going to respond to this, but Eversource had mentioned

that "all non-capital expenses would be deferred for review and recovery in its next distribution rate case." After the -- the proposal that you made here, I'm just trying to get a sense, a rough sense, now that I also know that, for the commercial, you have indicated it's $500,000, give me a sense of, overall, like, what I'm talking about as far as "non-capital expenditure" is concerned?

A (Davis) I apologize, Commissioner. Could you repeat the question again?

Q Okay. So, let me repeat. The Eversource -- Eversource has mentioned that "all non-capital expenses will be deferred for review and recovery in its next distribution rate case." I'm just trying to get a sense of, the amount that is being talked about here, overall, including the commercial piece, just give me a sense of what -- what part would be in the nature of "non-capital expenditure", very rough numbers?

A (Davis) I don't have a breakdown between capital and non-capital. Sum total?

A (Boughan) For the Pilot, is the question?

A (Davis) Yes.

A (Boughan) So, for the Pilot, there would not be any capital in the cost estimate.
Q Okay. So, that's helpful. I'm talking about the entire amount?
A (Davis) So, then, we have the investments for the residential and the commercial EV time-of-use themselves.
Q Yes.
A (Davis) So, that's -- what's that, a million dollars, roughly?
A (Boughan) Yes.
Q 1.1?
A (Davis) 1.1, okay. Plus 500. And, so, 1.6 million, roughly, on that order.
Q And that would be all non-capital?
A (Davis) If I remember correctly, the EVSE Pilot amount was considered "non-capital".
Q Okay.
A (Davis) But, to the extent some of the other investments are capital projects, maybe Mr. Moore can assist me with clarifying that.
A (Moore) Yes. We would, as part of IT investments --
[Court reporter interruption.]

BY THE WITNESS:

A (Moore) I'm sorry. As part of our IT investments, we would seek to capitalize those investments. And those would be capitalized by both -- those would be considered --

[Court reporter interruption.]

CONTINUED BY THE WITNESS:

A (Moore) Those would be considered capital. I'm sorry.

BY CMSR. CHATTOPADHYAY:

Q Can you give me a sense of how much? Just roughly? I'm not -- you know, I understand this is a moving target, but --

A (Moore) I would say the majority of them would be. So, the vast majority of those would be capitalized. And, so, if it was an IT cost of $500,000, I would say 90, 95 percent of that would be capitalizable.

Q Thank you. This is, again, a sort of a technology question. But what you have proposed, you know, as part of the Pilot, do you have a sense of how it is the EVSE-related activities sort of how is it different from the other utilities in New Hampshire? And I'm just

curious.

A (Moore) Yes. I can take that question. I believe Unitil has a five year-old system, and I believe Liberty's system is, I believe, a few months old. We're dealing with an older vintage customer service asset. That in itself allows us to have a bigger hill to climb. So, from a technical standpoint, we're starting at a position where our systems are less sophisticated, and they weren't developed in an era where time-of-use, EV, and some of these other types of devices that we're now trying to measure and bill existed. That in itself creates that we have to create some of this from a customized standpoint, it's not built into the system. And, when you're customizing systems, those costs are driven -- are part of the cost drivers that drive up. And I think someone mentioned about being "high". Well, you have to look at relative to where the starting point is, or the achievement of making these rates available to our customers.

And then, folks can draw from what happened to Southwest Airlines, if you don't

really keep your eye on manual processes, that you can lead yourself into a big disadvantage with your customers, as well as the quality of the work that you perform.

CMSR. CHATTOPADHYAY: Thank you. I think those are all the questions I have.

CHAIRMAN GOLDNER: Okay.

BY CHAIRMAN GOLDNER:

Q I thought I would start with the physical implementation of the Pilot. And you touched on a piece of it earlier, but I just want to repeat it back to you and see if I've gotten it right.

So, I'm imagining that I have an EV in my garage. And I've -- and a point of this Pilot is to take either the telematics or the information coming from the charger, and check that against the utility data, so that you can confirm that, in the future, you could use the ChargePoint information, you could use the information from the Tesla, and you would feel confident that that was the same quality of information that you would get through your utility-grade meter. Is that a fair summary?

A (Boughan) In addition to the data accuracy, would

be the reliability, --
Q Security.
A (Boughan) -- security, *et cetera*.
Q Those other pieces.
A (Boughan) Yes.
Q Fair enough. So that, in terms of how would physically implement that, let's imagine for a moment that the house meter is on my garage already, let's keep it simple please. And then, you would have to install a second meter, a second utility-grade meter, next to your house meter, so you would know what the difference was. And then, you would compare that second meter to the telemetry data or the data coming from the charger itself, and gain confidence. That's right?
A (Boughan) That's accurate.
Q Okay. And, so, you would need -- there's lots of different implementations out there. There's the -- ChargePoint has the technology, I'm sure there's other technologies out there from the charger itself. The cars themselves, I'm sure, use different standards and have different reporting mechanisms and so forth. So, you

would -- there's probably, well, let's just say, tens, if not hundreds, of permutations that you could experience that you have to deal with.

So, you would need a lot of -- you would need sort of multiples of each of those implementations for you, Eversource, to gain confidence that your security, your reliability, your confidence in the data would be -- would be high.

And I guess where I'm going is, like, so, let's say you've got a Tesla or you've got a ChargePoint, or you've got whatever the permutation is, how many of those do you need before you're confident in the data?

A (Boughan) Right. So, practically, we would need to limit the participants from the EVSE perspective, and only those participants who met the standards that we would be able to bill off we would be able to use going forward.

Q Okay. Okay. Because I'm imagining being in your shoes, and being -- the word "terrified" comes to mind, maybe I shouldn't use that word, but you've got so many different standards, some much different data coming at you, and you're having

to synthesize all that data. It sounds to me very complex, and it sounds like -- it's true that you could only choose a few technologies. So, maybe ChargePoint would be one technology, maybe there's a few others you would use to get the data from the charger, that could be simplified, right? There might only be two or three different solutions there.

On the car side, though, you have a plethora of options, right? So, --

A (Boughan) I agree that the vehicle telematics presents a much more daunting hill to climb, as far as standardization goes, and availability.

Q So, I would say, therefore, why not limit it to the charger itself, and not bother with the telematics, given the complexity and the different standards and all the other stuff coming from the car manufacturers?

A (Boughan) That's certainly a way to go. We would just -- the order indicated that we should do both. So, we proposed both.

Q You proposed both. But, if we -- if the Commission came back and said, you know, "Thank you for proposing both. But, in order to

simplify, let's just use charger technology." Would there be savings there? Should we make a record request to sort of quantify the savings, or would you say it's "minimal"? Or, how would you reply to that?

A (Boughan) As far as implementing the Pilot, I don't believe there would be a significant savings between leaving out one segment or the other.

Q And tell me more about why that would be? It seems like it would -- I think we agreed earlier, there's a lot more work to deal with, you know, automotive stuff, than the charger stuff, where there's only one or two solutions, I would think it would be much simpler?

A (Boughan) I think the work involved is just the number and availability on the vehicle side. But, in the actual receiving of data or enrolling customers, I don't think the dollar difference would be significant.

Amy, do you agree?

A (Findlay) Right. Yes. And I think, too, it does simplify things a bit, you're right, to not have telematics involved. But, even when we're

talking about charger manufacturers, so, we have a handful that we do work with now. But the industry isn't consolidating yet. And there continues to be more charger manufacturers out there. So, I think we'd have to think realistically, you know, if we went through this Pilot with two or three chargers, are those the only ones that are going to be good enough for the next few years? And then, is there another, you know, sort of round of qualification that we need to do, like more tests? Like, is this sort of a rolling basis to accommodate more charger types? Or, do we sort of try and influence customer's purchasing decision?

Q Well, I think we might be going to the same place. It seems like a cat chasing its tail. You know, the technology is going to continue to evolve. By the time we get this Pilot done, there will be 20 more technologies that have come out. The industry is not consolidating around a standard; that would have been nice.

And, so, from an automotive perspective, I can just imagine this is a never-ending quest to get to the data. And

that's why I sort of focus in on the chargers, because it seems like the charger folks are more -- are maybe more -- it's maybe more possible to consolidate around a standard.

I'm just fearful that you're going to do a lot of work for no benefit.

A (Findlay) Yes. I was thinking more from the charger side of things as well. You know, there are some big players out there, in terms of manufacturers on chargers now, but that market is still growing. And there are new charger manufacturers coming to the table.

So, I was even referring just to, if we contained it to just the chargers, I think that your analogy of "a cat chasing its tail" still applies.

CHAIRMAN GOLDNER: And maybe, to ChargePoint, maybe in closing you could touch on some -- the status of the industry consolidation around a particular standard, if you could please. Thank you.

BY CHAIRMAN GOLDNER:

Q And then, I think -- I think Unitil is doing something similar. Is that -- is that true? Or

would you say they're not doing something similar to what you're doing?

A (Boughan) So, our proposal was based on the Unitil proposal. My understanding is that it was approved as part of the Settlement Agreement provisionally, if it were approved in the rate case. My understanding was it wasn't approved in the rate case. I may have this wrong.

So, I don't believe they're going forward with a pilot at this point. So that ours would be the only, if directed to implement, would be the only out there.

Q I see. So, you modeled on Unitil, but --

A *(Witness Boughan indicating in the affirmative).*

Q Okay.

A (Boughan) Correct.

Q I see. Okay. So, let's move to the cost piece for a moment.

So, I'm trying to put it in the right bucket. I think that the residential bucket is 1.1 million, and the commercial bucket is 500,000, in terms of the costs that you would seek recovery for eventually, Mr. Davis?

A (Davis) Yes, Chairman. The residential is 600,

the estimate is 600, and the commercial is 500.
Q But, then, you have the 511 for the Pilot itself. That goes into the residential bucket or the commercial bucket, or both?
A (Davis) The EVSE Pilot?
Q Yes.
A (Davis) Oh. That would be in addition and separate. So, that's residential. Yes.
Q Right. Right. So, --
A (Davis) I see. Yes.
Q Yes. Thank you.
A (Davis) Also only have to take care of me on my end.
[Multiple parties speaking at the same time.]
BY CHAIRMAN GOLDNER:
Q I'm happy to end with that. But, yes. That's always good.
A (Davis) I think we were splitting capital versus expense earlier. So, I was separating those.
Q Oh, no. That's fair. So, yes. So, we're not worrying about capital versus expense, but just total cost, --
A (Davis) Uh-huh.

Q -- 1.1 million for residential, 500,000 for commercial?
A (Davis) Correct.
Q Okay. So, if the Commission came back and said "You know, thank you for your proposal. We would like to move forward with the residential, but not the commercial." What would be the response from Eversource? What would be the concern? Can you share the impact on Eversource. If that was the conclusion we drew?
A (Davis) There's probably several ways to look at this. And I'll start, and then maybe others can add in.

Obviously, first of all, from the rate itself, from a rate design perspective, we have a rate design that's submitted to the Commission. And, so, there's a process to get approval and then implement that. The Pilot itself, I guess the further development and design of that, to marry up with that.

So, the rate design piece and the rate implementation, we've covered that pretty thoroughly, as far as --
Q It would be greatly simplified if you didn't have

to do one of them, I guess, right? I mean, if we said "no commercial", then the rates would be there, but nobody would be using them, right?

A (Davis) Yes. That's one way to look at it. I mean, the commercial is a much more complex rate, as we heard earlier. It's certainly a new design that we haven't implemented previously. But it does resolve, I think, all those manual billing questions that we have, at least on the commercial side.

Q It just seems awfully expensive to run some few commercial customers through a project where I'm not clear on the benefit. But I am clear on the cost, it will be 500,000, or perhaps more. The cost is illustrative, right? So, it might be a lot more than that. We don't know yet.

But I'm wondering what benefit do we get from -- from doing the commercial manual process? I don't understand the benefit versus the cost?

A (Davis) Well, that's the open question.

Q Right.

A (Davis) I think, you know, to the benefit, you know, what are the benefits? If we don't have,

you know, several customers perhaps sign up, you know, the various hurdles and costs to implement, versus what benefit we're bringing? So, I mean, we do have some other rates that are available, you know, just for public charging as a demand charge alternative, and we have general service rates.

But there are a lot of other principles and purposes we're trying to achieve with the commercial Time-of-Use rate.

Q Can you share what those are, of the additional benefits?

A (Davis) Well, certainly, the broader application, first of all, the time-of-use element. And I think, like any of the commercial rate approaches, the demand charge barrier, of course, was a big hurdle, and it's a nationwide issue, of course, and we certainly looked at that here.

So, in the design that we implemented per the Commission's order, it was built off of the design for Liberty/Unitil in the Settlement that was achieved there. So, structurally, it's essentially the same rate. It does provide the time-of-use, in fact, three periods, instead of

two. So, presumably, there are the so-called "price signals", and the economic benefits.

It's not the same as having, for example, something like managed charging, where you're actually controlling the load, but you're providing those price signals.

And the other key thing, I think, was our current time-of-use periods, compared to those three that we designed into the rate, was an attempt to get a really much more granular look at our costs, particularly marginal costs, and really costs to provide service for distribution, transmission, and generation supply. Been lots of challenges there, but at least we're taking a step in that direction, to try to better understand our costs, and try to reset prices consistent with that.

But the further difficulty is "what are you targeting?" You know, public charging time-of-use rates we're not necessarily discretionary load, and time-of-use rates was an issue there.

Here, you have so many potential applications of a broader applicability of the

commercial Time-of-Use rate, whether it's fleets or working **[?]** destinations. There's a lot of different applications.

So, it's our first foray into something that complex. So, I guess there's also a lot of learning opportunities.

So, we have the principles, and kind of the economics that we built into the rate. And we certainly want to maintain cost-based rates. And that would be our first foray into this.

There's a number of benefits. And I think a lot of it's in our testimony or the collective testimonies that led to that rate design, still to be tested.

Q I see. I'm just -- I'm thinking that perhaps, you know, the other utilities, because of the -- from an IT perspective there, I assume you're using a mainframe, so, you've got a mainframe solution?

A (Moore) We have a mainframe --

[Court reporter interruption.]

BY THE WITNESS:

A (Moore) A mainframe back-end, and a front-end, that is distributed. So, yes. Mainframe

back-end.
BY CHAIRMAN GOLDNER:
Q Mainframe back-end. And the other two utilities, I think you explained earlier, were you saying "SAP" or some other sort of more modern system?
A (Moore) That's correct.
Q Okay. Okay. And, so, is your concern with the three-period rate that you would want to learn as much as you can, even if a lot of it's manual, you still would like to proceed on that path, and that the learning that you might get from Unitil and Liberty, because they're already using three-period solutions, because their IT system is more modern, you wouldn't see the benefit from learning from them, you want to do it yourself manually?
A (Davis) I wasn't necessarily -- I mean, I'll just give you my personal view that the -- it's a little premature, in my opinion, to put this rate in place. But there are opportunities for learning from either the design, but I would say, from the implementations, we have to work with current technologies. So, metering and billing, and we have two different billing systems, you

know, that we tap into for looking at potential new rates. And that's -- obviously, the solutions we can do now are based on our current system.

So, I'm not so much focused on comparing systems. I think we have to work with our own metering/billing, and our own, you know, evolution there. I was probably more referring to the benefits of having a particular rate design, particularly a three-period/three-part structure, you know, which includes generation supply. And then, you have the issue with a competitive supply versus, you know, default service or company-supplied energy supply.

And I think, from that point, it's a matter of customer behavior. But we're so early in the market, we're so early with offerings and applications. You know, and very much akin to "how many participants do you need to collect, you know, meaningful data?" There's a large cost to implement this at this time. And, so, that's an economic hurdle, just in terms of the rate and the cost to build this. And how many customers will we have?

So, I guess, in theory, and in principle, if you were to implement a different, new, more complex rate structure, that had those elements of time-varying rates for a lot of the components, a different demand charge, and then, you know, where are the different applications as the markets evolve? So, we could choose a charge type on the commercial side, and that could span anywhere from public to workplace, light-duty fleets, there's whole various sectors that that rate could apply to.

And then, the other question I have is "Is an otherwise applicable rate sufficient at this early stage?" You're not going to the expense or the concerns over metering and billing, and, you know, systems that we'd have to upgrade. Manual billing versus automation of that, you know, it's not an issue we have to confront at this juncture. But I don't know if that meets the needs of the market, particularly demand charge issues. I think that's been probably the most outstanding issue that had come in up front and remains an issue.

A (Carloni) And, if I can add, as you mentioned,

from the customer experience point of view, the manual billing is not going to draw people to this rate. And I think that's the reason that we want to -- that we're here, is to try to encourage electric vehicles.

And, personally, the manual billing experience that we already in other states, we know it's not a great customer satisfier.

Q Yes. I mean, I'm still struggling with the commercial piece, because you have, on billing side, it's been a mess. And then, on the front-end side, if you're taking the telematics data or data from whatever the source is, and comparing it to the utility-grade meter, I don't -- and please comment, if you wish. But I sort of don't get why that's helpful?

I mean, I understand you might have a fleet of cars, where ten cars are all in a row, and so you have to gather all that data, and maybe that is -- there's benefit in that, I don't know what that would be.

But I sort of understand the residential piece, but I don't understand, from an engineering point of view, I don't understand

the commercial piece or how that would benefit Eversource?

And I'll give you -- that wasn't a monologue. If you would like to comment, please feel free. But that's where I'm -- I'm not able to grasp that.

A (Davis) Yes. I mean, we're trying to learn a lot here. So, there's a number of elements here. I don't know that I have any particular comment at the moment. I just want to --

Q Okay.

A (Davis) I think it's a dialogue that we're having here. And, obviously, the benefits that we're trying to glean from this, we just may not be able to see what they all are yet. So, by designing a particular, say, a rate structure, as an example, or a process, at the end of the day, I think the rates matter in terms of what it costs to charge. And the applications, for example, of fleet, that has a schedulable, you know, load and that kind of thing. I mean, if there's a time-of-use rate, that might incentivize a particular time to charge, you know, as an example.

If you're dealing with low load factors, or you want to maximize your productivity by having higher utilization for a given demand level, you know, those kinds of things, that's where the rate design kind of comes into play, in terms of a decision on the charging side. And, if it's, let's say, a business operating a fleet, that might be different than offering public charging, you know.

Q Okay.

A (Davis) So, there's a lot of things I think we're just exploring now. And, to put a particular rate design in place and a footprint down, that gives us a basis to start to understand and compare.

Q Okay. I guess the good news is, it all involves electricity.

A (Davis) Yes.

Q So, that's a plus.

A (Davis) And that's what we do.

Q That's right. So, we're in the right place.

Okay. Let me -- I had a couple of additional questions on a related topic. So, on

the rate design, that you were alluding to, I think, I think your customer charge per month was "16.50"; I think Unitil was "5.26"; I think Liberty was "$11.00" or something.

A (Davis) Yes.

Q Can you -- can you educate us on why theirs are so different? And that could be addressed to anyone. I'm not picking on Mr. Davis.

A (Davis) And I apologize again. It's the third time I was writing.

Q No worries.

A (Davis) And could I ask for a repeat of the question please?

Q No worries. No worries. And I'll -- Dr. Chattopadhyay is not so -- I'll answer one as well.

So, we have a customer charge of "16.50" for Eversource; we have a "5.26" charge at Unitil; and we have I think, roughly, "$11.00" from Liberty, and I don't understand why theirs are so different?

A (Davis) Speaking specifically for Eversource, in developing our rate design, and we happen to be, at the same time, looking at our residential

rates for a new whole house time-of-day rate, but evaluating the types of costs involved in providing service, and particularly on the customer charge.

We evaluated -- we did a distribution marginal cost study, as well as an embedded cost study, in our last rate case, and we utilized that information to determine what the -- well, the customer-related costs particularly, and the more fixed and dedicated costs are involved in providing service to a residential customer.

Now, an important pretext here is the assumption that a separately-metered residential EV rate would actually provide -- would be connected to the same transformer or service to the whole house. In other words, we would, as we have with water heating, we would split the service and connect a separately-metered EV charger at a residence.

So, in your example with your garage, versus your home, we would split the service, drop a second meter to your garage to the EVSE, or the EV -- the charger. And, so, the service all comes in from the street to the home

location. And that's important, because, if we analyze just a brand-new service to an electric vehicle, what would it, for residential, in this case, what would it take to provide service?

So, we have a combination of our customer costs, and that might include the meter, and the cost for meter reading, *et cetera*, but also a local -- local facilities. And those would include a local service transformer and a local service drop to the home, to the EV service.

If we had to do that stand-alone, that's effectively looking at a whole new residential rate, effectively. So, you have a dedicated transformer or a shared transformer from the street, all those kinds of things.

Our costs, from our marginal cost analysis particularly, puts our costs, just for the fixed cost, up on the order of -- I don't remember the numbers offhand, let's say it's $35. But, by recognizing we're splitting load, we have dedicated local facilities to provide both the home and the electric vehicle, but that we could recognize it, if a customer charges off peak,

that they're avoiding increased capacity, and, therefore, for example, a need to not have to put a larger transformer in to meet the load of not only the home, but the home plus the EV.

So, the context and the configuration matters, in terms of designing a rate for the EVSE.

Q I'm just curious if the --

A (Davis) But our costs higher, and the costs are what they are, I can't necessarily compare with the other utilities. But our costs came in on the order of $35.

Q No problem.

A (Davis) Yes.

Q And I appreciate the explanation. I was just going to ask the Department of Energy, and Mr. Young or Dr. Sergici, whoever it makes more sense, do you have any concerns with the customer charge for Eversource in this particular instance?

A (Sergici) Yes. I do not have concerns with that customer charge. Because, to the extent that those costs are to be incurred, you could either move those demand and capacity-related costs to a

the demand charge or a customer charge, or you could roll them into a volumetric rate.

So, for a time-of-use rate targeting an EV customer, it's more cost-based, as well as beneficial for the EV customers to actually register those costs as fixed, and, again, in the absence of any demand charges, so that volumetric rates are not really artificially raised, because then it would mean higher charging costs for the customer and it would be deviating from efficient price signals. So, yes. No concerns.

CHAIRMAN GOLDNER: Mr. Young, anything to add?

MR. YOUNG: Nothing to add.

CHAIRMAN GOLDNER: Okay. Thank you. What drew the Commission's attention was, you know, you have a $5.00, you have a $10.00, and you have a $16.00. So, it's like a single, double, then a triple. So, it was something that drew our attention. But we can move on.

BY CHAIRMAN GOLDNER:

Q Coming back to the $600,000 cost of implementing the TOU rates, is this scalable? In other words, if you had $10,000 -- 10,000 customers, rather,

on this program later on, would everything work the same? Is this -- how would that work? Anyone?

A (Moore) From an IT technology standpoint, the rate itself would work for a multitude of customers, as long as there's no variation in the underlying customer profile.

For example, we have some customers that get discounts, or if we had some new attribute for a customer and we needed to adjust the rates, we do that by cloning that existing rate, and then maybe adding whatever needs to be added. So, for example, if we offered a low-income rate, that also would apply for this, we would have to build the attributes around the previously designed rate.

So, from a numbers standpoint, it would be scalable, from the rate perspective. Where you may get an issue in scaling is really depending on how we collect the information and the telemetry that's used. For example, if we're not using our traditional meter, and let's say we need to use other devices, I may have to build different interfaces and to capture that

information.

Q Okay. Thank you. That's helpful. So, my takeaway from this is that, if you do experience -- if you do scale this two-period TOU rate, without any changes, then, whether it's 100 customers, 1,000 customers, you know, 500,000 customers, which I think you have in New Hampshire, it would be -- you wouldn't be coming back asking for more money, if we didn't do anything to change the rate structure?

A (Davis) That's how we designed it. So, we would expect it to work that way.

Q Okay. Yes. I just wanted to check. Thank you.

Okay. Maybe we can move to the timeline. You have a table in Exhibit 37 that talks about, and you addressed it earlier as well, the Third-Party RFP taking 6 months; the enrollment period taking 6 months; duration of data collection, 12 months; analysis and reporting, 6 to 12 months. I'll probably ask an obvious question. And, if Commissioner Chattopadhyay asked the same question, my apologies.

But I can understand an RFP time

period, I can understand an enrollment time period, I can understand a duration of data collection time period. But I would think you would be doing your analysis and reporting in parallel, so you'd be ready to go on day one. I think you may have mentioned it earlier?

A (Findlay) Yes. I think we could. I think that gets back to the quality of the data that's coming in. You know, we wanted a full year of data. So, if the data in that 12 months is delayed, or that last month is delayed for any reason, you know, it's just -- it's wrapping up the analysis, and sort of making sure that we've got, you know, everything that we need in order to sort of put a bow on it.

Q Okay. Okay. That makes sense. And I also don't understand, in the table right below that, on Exhibit 37, there's a "Telematics Enrollment Incentive" of "$100" and an "EVSE Enrollment Incentive" of "$500", which makes me think you prefer EVSE enrollment to telematics enrollment, and maybe that was my line of questioning earlier. But I would like to give you an opportunity to highlight why one is so different

than the other?

A (Findlay) I think it's the up-front cost to install the EVSE. Where, if the customer is just going to bring their vehicle telematics, we're sort of agnostic, in terms of what the manufacturer that they have for their home charger is, versus we're trying incentivize them to install a specific manufacturer of charger that we're interested in testing the data from, we figured that we would need to incentivize that a bit more.

Q I see. That makes sense. And how much would you estimate the implementation of an EVSE, you know, system in the house? So, you're incentivizing $500 off of what base?

A (Boughan) So, there's a range of charger costs. I can -- a smart embedded EVSE charger, approximate, is $700. And then, there would be the costs if you needed to upgrade your panel, or the cost to install the 240-volt plug in your garage.

So, for example, personally, I had room on my panel, but it cost $450 to install the 240-volt plug.

Q That makes sense. So, you've got the hardware that's $700, but then you have a lot of other potential costs to implement it. So, you want to draw that down by 500, to make it more reasonable.

And the telematics implementation is just the car itself. You already have a plug into the car. So, you don't -- that's just sort of like "Please sign up for my program", but you're not really saving any money?

A *(Witness Boughan indicating in the affirmative).*

Q Okay. Thank you.

A (Boughan) That's accurate, yes.

Q Thank you. Yes, thank you for verbalizing. The stenographer appreciates the "yes" or "no". All right. Thank you.

Do you know about any other sources of incentives, for example, federal incentives, provided to participating customers for this program?

A (Boughan) On the residential side?

Q On either.

A (Boughan) Yes.

Q Are you aware of any federal incentives, I guess

is the question, on any of the programs we're talking about here today?
A (Boughan) For 2023, I'm not 100 percent sure. For 2022, there was a federal tax credit for installing a charger in your home.
Q Okay. And what was that incentive? How much?
A (Boughan) I don't have that information.
Q Okay. Okay. But there was one. And, so, you're sure on 2022 that there was one. You're not sure if --
A (Boughan) I'm not sure that it's been extended for 2023.
CHAIRMAN GOLDNER: You're not sure it's been extended. Okay. Thank you.
All right. Let me return to Commissioner Chattopadhyay for any follow-on questions, if any?
CMSR. CHATTOPADHYAY: I do.
BY CMSR. CHATTOPADHYAY:
Q I'm interested in consumer behavior. So, is it possible for you to, if not now, probably as a response to a record request, describe in detail the demand response programs in Connecticut and Massachusetts in which EV charging customers

participate? Include reference to dockets and ordering authorizing the programs, also include the number of customers by class participating in each of the respective programs, and the results of any studies or reporting required in those states.

I'm going to assume this will require a written response. So, we'll be happy to provide a record request.

A (Findlay) Okay.

CMSR. CHATTOPADHYAY: And that's all I have.

CHAIRMAN GOLDNER: Is there anything else that we missed? Just a moment please.

[Chairman Goldner and Commissioner Chattopadhyay conferring.]

CHAIRMAN GOLDNER: Okay. Very good. I think that's all the Commissioner questions.

And let's move to redirect, beginning with Eversource, and then also, afterwards, the Department of Energy for their witnesses.

MS. CHIAVARA: And I just have a couple of brief things.

REDIRECT EXAMINATION

BY MS. CHIAVARA:
Q First, for Mr. Davis, there was quite a bit of discussion about what the possible benefits are for gathering data about this sort of new group or customer class that would be captured in a commercial Time-of-Use rate. But, just at a very high level, do you think that, like, is it the Company's position that this should be adopted at this time? And, if so, why? And, if not, why not?
A (Davis) I do believe it's a bit premature to be offering this rate at this time. So, we don't necessarily support -- I mean, we, obviously, complied and have worked very hard to design a rate that meets all the objectives that we think the rate would apply. We just think it's maybe, economically, not the best spend for this kind of rate at this time, if there's alternatives that can be put in place or utilized. We didn't talk about managed charging or other alternatives, but we do have other rate options that might serve purposes in the near term. And this is not new. It's pretty much where we were originally, prior to being ordered to implement this rate.

But I would say, generally speaking, it may just be premature to go through the effort and this rate in place at this time.

Q Okay. Thank you very much. Next, for Mr. Boughan, regarding the EVSE Pilot, what is the primary concern? I guess, when it comes to customer enrollment, how likely or unlikely do you think it is that we get 50 customers?

And I guess, as a follow-up or two-part question, could it be that, if we are directed to implement the Pilot, that we could end up spending this money, and customers do not enroll, and so we would not be able to move forward with the Pilot, with costs already incurred?

A (Boughan) I think the barrier, the high barrier to the success of an enrollment in the Pilot is the precondition that the customer enroll in the residential EV-specific Time-of-Use rate. If we don't -- if we move forward with the Pilot, and find that we're not getting the enrollment, there would still be some dollars spent on the Pilot, not the full amount, because the full amount includes costs of enrollment, and then a full, you know, consultant costs, but there would be

some costs that we would incur to launch the Pilot.

Q Okay. Thank you very much. And then, last, for Ms. Findlay, you mentioned programs, Eversource's programs in other jurisdictions, and referenced "managed charging". Do you believe that managed charging achieves what these time-of-use rates were designed to achieve? And can you speak to the relative merits of those programs and how they have been effective or could be effective?

A (Findlay) Yes. So, I think that our managed charging programs essentially serve as the same sort of economic signal to customers about when it's beneficial to charge their vehicles. We can push that charging outside of peak periods.

I think one of the attractive things about managed charging is that it is more flexible. So, rather than having a rate that is really designed to be more prescriptive and for customers to pay attention, there's a lot more flexibility with managed charging programs to address distribution-level constraints. Also, we avoid the sort of time or peak issue, where you have a bunch of electric vehicles that, you know,

want to start charging at the same time. So, they'll all plug in at the same time in order to take advantage of the rate. And then, you know, you've got sort of a new problem that's created that you don't really have the ability to remediate or solve.

So, I think, with managed charging, the ability to have flexible program design, in addition to just the ease of being able to communicate with customers about the value of the program as well.

From my experience, you know, delivering these programs in other states, customers, it's very easy for them to understand, you know, "Do a majority of your charging during these off-peak periods and we'll pay you $10.00 a month." Versus, "We will, you know, charge you 3 cents per kWh when you charge at this time and 5 cents when you charge at this time." Most customers -- most residential customers don't have the capacity or the desire to pay attention that much.

I think, you know, we think that these programs are, you know, really interesting, and

we're in the weeds with them. But a majority of customers just want us to, you know, make things easy for them, and want us to, you know, maybe they're okay with us having a bit more control over when they're charging, if it means that it's going to lower their bills.

MS. CHIAVARA: Okay. Thank you. That is all I have.

CHAIRMAN GOLDNER: Okay. Very good. Does the Department of Energy have any redirect for their witness?

MR. YOUNG: Not at this time.

CHAIRMAN GOLDNER: Okay. Very good.

All right. Are there any objections to striking identification on the two exhibits, Exhibits 36 and 37, and then the record request from Commissioner Chattopadhyay, which would be Exhibit 38.

*(**Exhibit 38** reserved for record request.)*

CHAIRMAN GOLDNER: Any concerns?

MS. CHIAVARA: I just was hoping that I could get the details of Exhibit 38? I got down as much as I could, but I want to make sure I

have everything that was asked for.

CMSR. CHATTOPADHYAY: Would it make sense if we send the record request in writing or you want me to go over it right now?

MS. CHIAVARA: No. Whatever --

CMSR. CHATTOPADHYAY: I think that sending it in writing, --

MS. CHIAVARA: Sure.

CMSR. CHATTOPADHYAY: -- that would help.

MS. CHIAVARA: Thank you.

CHAIRMAN GOLDNER: Okay. Very good. Then, we'll strike ID on the exhibits and submit them into evidence.

Let's move to -- just a moment here.

[Short pause.]

CHAIRMAN GOLDNER: So, let's move to -- let's move to close. And is live close okay with everyone or would people prefer a written closing?

MR. YOUNG: Live closings.

CHAIRMAN GOLDNER: Live closings. Very good. That works for us as well.

So, let's begin with the New Hampshire

Department of Environmental Services, if there's anything that you would like to add?

MR. LaMOREAUX: I would like to applaud the Commission and Eversource for undertaking this challenging proposition.

DES does recognize the benefits that increased EV adoption will have on air quality in New Hampshire as a result of reduced priority pollutants and greenhouse gas emissions from the transportation sector.

We would also like to encourage the design of this program to allow flexibility to consider future scalability to net metering of EV time-of-use interconnections. There are existing opportunities for V2G charging that would allow EV assets to be deployed to reduce electrical demand during times of peak loads. This would also -- this would allow customers to reap a financial benefit from their investment, and would also reduce costs for all New Hampshire ratepayers by reducing the assessment of both demand and transmission costs that are allocated during monthly and annual peak loads.

Thank you.

CHAIRMAN GOLDNER: Thank you, sir. And we can move to ChargePoint.

MR. DEAL: I would also just like to echo some of those sentiments to thank the Company for taking such a detailed look at this, and for the Commission taking some of these actions.

I know there was a question from the Bench about industry standards around metering accuracy. I was, essentially, planning to do that in writing. If there are any questions, based on what I'm about to say, I'm happy to follow up.

I will say that there are two different metering accuracy elements to vehicle telematics sources, EVSE. There is an industry standard for the metering accuracy embedded within the EVSE through NIST's Handbook 44, National Institute of Standards and Technology. It's Handbook Section 3.4, that has, up until January 1st of this year, been labeled as a "tentative code". As of January 1st of this year, that is now a permanent code. And various states are taking actions to verify or certify electric vehicle charging

embedded metering to meet those accuracy standards.

So, that is one method to sort of narrow the field of these pilot programs that we're seeing across the country, to take it from, we'll say, 50 manufacturers in a pilot to those that qualify for net metering accuracy, to some of the questions about there being too many options.

Happy to provide more information in writing or follow up on that. And I will also state that there a number of these pilots, and ChargePoint has put those in our comments previously in this docket, jurisdictions in Ohio, Minnesota, California, that have done similar pilots as well. California also recently became the first state in the nation to enable widespread EVSE sub-metering across all utility service territories. So, there is some momentum here. And I applaud New Hampshire, one of the first Northeast states, for taking a detailed look at that.

So, I will stop there.

CHAIRMAN GOLDNER: Great. Thank you,

sir. And the New Hampshire Department of Energy?

MR. YOUNG: Thank you, Commissioners.

First, the Department would like to thank the Company for taking the time last week to discuss their filings and answer all the questions.

The Department would just like to express our support for the Company's proposals for a two-period time-of-use rate for separately-metered electric vehicle charging for residential customers and a three-period time-of-use rate for separately-metered electric vehicle charging for commercial customers.

The Department also supports the Company's Alternative Metering Feasibility Assessment Pilot Program proposal under consideration here today.

I would just note that the Company's proposed billing costs of $600,000 for residential billing and $500,000 for commercial billing upgrades do seem high. The Department had hoped the billing implementation, in particular the residential billing upgrades, would be a less expensive exercise, given the

Company's current use of whole house time-of-use rates. While these costs are much less than the original $9 million estimated cost of billing upgrades, if approved, we would still encourage the Company to leverage any knowledge-base software or processes currently in place at Eversource regarding time-of-use rates in these proposed billing upgrades in order to keep costs down.

CHAIRMAN GOLDNER: Thank you. And now, we'll move to Eversource.

MS. CHIAVARA: Thank you.

First, I'd like to say, I'd like to thank everybody for showing up and participating, and thank the Commission for its thoughtful questions.

Eversource most certainly wants to advance greater EV adoption in New Hampshire. We are fully behind that goal. We also want to take a comprehensive approach to how to implement this goal, both in the near term and in the long term. And we feel that taking an approach in both of those ways is worth examining.

In the near term, the Company doesn't

necessarily see a viable business case for time-of-use rates, in that the possible benefits that customers could experience from any rate savings would be outweighed by the cost to install separately-metered service. And, also, they would have to really take advantage and charge almost entirely off-peak. So, the savings would be nominal. And then, there are the costs that it would take the Company to implement the rates and offer them. And there is also a concern that, you know, without customer enrollment, we would not be able to launch the Pilot Program.

But, in the spirit of not just saying "no" to things, we do believe that managed charging is a viable near-term solution that can advance the policy objectives of time-of-use rates, and also provide customers with tangible, concrete economic benefits, and help educate on, you know, times to charge, and would have the effect on the distribution system of, you know, modifying peak usage times.

So, we realize that, in the final order in this docket, managed charging was left to the

competitive market. But the Company still sees some merit in this, and we've had success with this in our other service territories. So, we would still like to put that out for consideration.

In regard to the costs to implement the rates, the residential rate was vetted pretty thoroughly during hearing. The commercial rate was not so much. And, you know, I think the witnesses did an excellent job today of showing just what kind of effort a manually billed rate is, is involved with billing manually.

But, of course, we will, you know, these are novel rates. So, we're in new territory. And, of course, we would harness any cost savings that come across as we were to as we implement the rates. And, you know, I think the witnesses emphasized that these are estimates, subject to change. But we would certainly look for any ability to save costs in the implementation of the rates.

Thank you for hearing us out today. And that's all I have.

CHAIRMAN GOLDNER: Okay. Thank you.

Is there anything else that we need to cover today?

[No verbal response.]

CHAIRMAN GOLDNER: No? Seeing none. I'll thank everyone, especially the witnesses. And we are adjourned.

(Whereupon the hearing was adjourned at 11:02 a.m.)