STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

March 7, 2023 - 9:34 a.m. **DAY 1**
21 South Fruit Street
Suite 10
Concord, NH

[Hearing also conducted via Webex]

RE: **DE 20-161**
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE d/b/a EVERSOURCE ENERGY:
2020 Least Cost Integrated Resource Plan.

PRESENT: Chairman Daniel C. Goldner, Presiding
Commissioner Pradip K. Chattopadhyay
Commissioner Carleton B. Simpson

Alexander Speidel, Esq./PUC Legal Advisor

Doreen Borden, Clerk & PUC Hybrid Hearing Host

APPEARANCES: **Reptg. Public Service Company of New Hampshire d/b/a Eversource Energy:**
Jessica B. Ralston, Esq. *(Keegan Werlin)*

Reptg. Clean Energy New Hampshire:
Elijah Emerson, Esq. *(Primmer Piper...)*

Reptg. Residential Ratepayers:
Donald M. Kreis, Esq., Consumer Adv.
Michael Crouse, Esq.
Office of Consumer Advocate

Reptg. New Hampshire Dept. of Energy:
Mary E. Schwarzer, Esq.
(Regulatory Support Division)

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

I N D E X

I N D E X *(continued)*

I N D E X *(continued)*

E X H I B I T S

EXHIBIT NO.	D E S C R I P T I O N	PAGE NO.
1	Least Cost Integrated Resource Plan and Supporting Attachments *[REDACTED - For PUBLIC Use]*	*premarked*
2	Least Cost Integrated Resource Plan and Supporting Attachments **{CONFIDENTIAL & PROPRIETARY}**	*premarked*
3	Least Cost Integrated Resource Plan Supplement *[REDACTED - For PUBLIC Use]*	*premarked*
4	Least Cost Integrated Resource Plan Supplement **{CONFIDENTIAL & PROPRIETARY}**	*premarked*
5	April 30, 2021 Customer Survey Results	*premarked*
6	May 28, 2021 System Assessment	*premarked*
7	Rebuttal Testimony of Russel Johnson, Lavelle Freeman, and Gerhard Walker	*premarked*
8	Supplemental Testimony and Supporting Attachments of Russel Johnson, Lavelle Freeman, Gerhard Walker, Matthew Cosgro, and Tracy Gionfriddo	*premarked*
9	Eversource Energy Responses to Department of Energy Data Requests Set 1	*premarked*
10	Eversource Energy Responses to Department of Energy Data Requests Set 2	*premarked*

E X H I B I T S (continued)

EXHIBIT NO.	D E S C R I P T I O N	PAGE NO.
11	Eversource Energy Responses to Department of Energy Data Requests Set 4	*premarked*
12	Eversource Energy Response to Department of Energy Data Request 4-003 **{CONFIDENTIAL & PROPRIETARY}**	*premarked*
13	Eversource Energy Responses to Department of Energy Data Requests Set 5	*premarked*
14	Eversource Energy Responses to Department of Energy Data Requests Set 6	*premarked*
15	Eversource Energy Responses to Clean Energy NH Data Requests Set 1	*premarked*
16	Revised Joint Testimony of Jay E. Dudley and Ronald D. Willoughby with Attachments	*premarked*
17	Revised Joint Testimony of Jay E. Dudley and Ronald D. Willoughby with Attachments **{CONFIDENTIAL & PROPRIETARY}**	*premarked*
18	Testimony of Tim Woolf and Ben Huvamaki with Attachments	*premarked*
19	Testimony of Christopher J. Skoglund	*premarked*
20	Technical Statement of Jay E. Dudley and Ronald D. Willoughby Re: PSNH's 2020 LCIRP and 2020 LCIRP Supplement	*premarked*

E X H I B I T S (continued)

EXHIBIT NO.	D E S C R I P T I O N	PAGE NO.
21	Department of Energy Status Update	*premarked*
22	Settlement Agreement between Eversource Energy and the N.H. Department of Energy	*premarked*

P R O C E E D I N G

CHAIRMAN GOLDNER: Okay. Good morning. I am Chairman Dan Goldner. I'm Presiding Officer here today, with Commissioner Simpson and Commissioner Chattopadhyay. This is the first day of hearings for DE 20-161, the Public Service Company of New Hampshire 2020 Least Cost Integrated Research Plan -- Resource Plan, rather, LCIRP.

On October 14th, 2020, the Commission commenced this adjudicative proceeding through the issuance of an Order of Notice, which said we are here to adjudicate whether this filing meets the statutory requirements in those imposed by RSA 378:38 and RSA 378:39, as amended, and Commission Order 26,362, dated June 3rd, 2020.

Let's begin today by taking appearances, beginning with the Company.

MS. RALSTON: Good morning. Jessica Ralston, from the law firm Keegan Werlin, on behalf of Public Service Company of New Hampshire, doing business as Eversource Energy.

CHAIRMAN GOLDNER: Thank you. And let's move to the New Hampshire Department of

Energy?

MS. SCHWARZER: Good morning, Mr. Chairman. Mary Schwarzer, I'm a Staff Attorney with the Department.

CHAIRMAN GOLDNER: Very good. And the Office of the Consumer Advocate?

MR. KREIS: Good morning, Mr. Chairman, Commissioners. I'm Donald Kreis, the Consumer Advocate, here on behalf of residential ratepayers. And I have my whole team with me, or much of it, and I guess I'll introduce them later.

CHAIRMAN GOLDNER: Thank you very much. And Clean Energy New Hampshire?

MR. EMERSON: Good morning, Commissioners. Eli Emerson, from Primmer, Piper, Eggleston & Cramer, on behalf of Clean Energy New Hampshire. Thank you.

CHAIRMAN GOLDNER: Very good. Okay. I'll address the outline for today's proceedings next, and then ask for any objections.

So, beginning with housekeeping matters, that would be the late-filed Settlement Agreement, the witness list substitution,

confidentiality, the scope for today, and the exhibits. Then, go to opening statements, then move forward with the Petitioner putting forward their case to meet the standards imposed by statute and Commission order. And, after hearing from the Petitioner, cross, and Commissioner questions, hearing from the DOE, the OCA, and CENH, in turn.

Are there any objections to this outline today?

Attorney Schwarzer.

MS. SCHWARZER: Thank you, Mr. Chairman. I would like to add an issue to the preliminary matters.

CHAIRMAN GOLDNER: Okay.

MS. SCHWARZER: The Department would just like to address an issue with a pending investigation in the DOE Docket 22-001, just briefly at the commencement of this proceeding.

CHAIRMAN GOLDNER: Okay. And you'd like to do that before the Petitioner takes the stand?

MS. SCHWARZER: Yes, Mr. Chairman.

CHAIRMAN GOLDNER: Okay. Okay.

MS. SCHWARZER: And we have no objection necessarily to going second, but we're also happy to go last.

CHAIRMAN GOLDNER: Okay. Very good. I'd suggest going second today because of the nature of the proceeding. We have -- I know the DOE and the Company have aligned on many topics. So, if you're going first and second today --

MS. SCHWARZER: We have. And we're amenable to going second.

CHAIRMAN GOLDNER: Thank you. Thank you. That would work great.

MR. KREIS: Mr. Chairman, if I might add another issue to your list of preliminary matters.

I'd like the Commission, if possible, to let the parties know that this case will be subject to post-hearing briefs, rather than post-hearing arguments. And the reason I think it would be useful to address that issue at the beginning of the hearing is that, if we're going to write briefs, that creates a more leisurely atmosphere for people like me. If I need to make an oral argument at the end of the hearings, then

I need to be taking frantic notes about what everybody is saying in here. And, if I can await the arrival of the transcripts before I compile whatever positions I think I want to take at the end of the hearing, that's a whole different process, at least for me.

CHAIRMAN GOLDNER: Okay. Very good, Attorney Kreis. We'll take that in turn today.

Attorney Emerson?

MR. EMERSON: Yes. So, I had proposed to the parties, and I can discuss this as we get closer to Mr. Skoglund's testimony, and I will request that he be able to do five to ten minutes of what I'm terming "surrebuttal testimony". It would be before cross-examination of the -- the other parties start their cross-examination. So, I just wanted to put that out there.

CHAIRMAN GOLDNER: Okay. Are there any objections to that approach from the parties?

MS. SCHWARZER: Mr. Chairman, I would ask about the scope of that surrebuttal?

CHAIRMAN GOLDNER: All right. Mr. Emerson, would you like to address that now?

MR. EMERSON: It's going to address the

interconnection standard, really, just replying, or just replying to what was contained in Eversource's supplemental and rebuttal testimony. But it would be limited to the interconnection, and really more the issues of cost allocation of interconnection costs.

CHAIRMAN GOLDNER: Okay. What I would suggest at this point is we'll take that in turn, Attorney Schwarzer. So, we'll go through, you know, sequentially each of the issues, and we'll have a chance to address it before the Petitioner takes the stand.

So, anything else that we'd like to add to the housekeeping, before we get started today? Anything else?

Attorney Schwarzer.

MS. SCHWARZER: Thank you, Mr. Chairman.

I was just curious about the scope of the post-hearing briefs, because it's not -- this is a very large docket, there are many topics. And it would be helpful if I understood what the Office of Consumer Advocate was intending.

CHAIRMAN GOLDNER: Okay. Very good.

I'm sure that the Consumer Advocate will address that when we get -- I think that's issue number five or six.

[Atty. Schwarzer indicating in the affirmative.]

CHAIRMAN GOLDNER: So, we'll take that up then.

Okay. Well, let's begin then with the late-filed Settlement Agreement. So, we have a late-filed Partial Settlement Agreement presented to the Commission Thursday, March 2nd, between the New Hampshire Department of Energy and Eversource. So, we need to determine whether the Commission should accept this late-filed Partial Settlement Agreement for consideration.

And I'll just begin by asking if there are any objections to the late-filed Partial Settlement?

MR. KREIS: There are, indeed, Mr. Chairman.

This docket has presented, to a party like the OCA, and possibly other parties, a perpetually moving target. And, you know, at some point, parties needed to prepare for hearing

by figuring out what issues would be before the Commission today. And, so, filing a settlement agreement between two of the parties that resolves some of the issues really just, I guess it was two business days before the hearing, that's a classic example of something that is fundamentally unfair.

This is a contested administrative proceeding under the Commission's rules and the Administrative Procedure Act. We've been doing a lot of dockets lately that proceed as informal investigations. And, in those contexts, for good or ill, there's a degree of informality, and I guess you could say "unpredictability", that just is not appropriate here. It simply is not appropriate to drop something big like that on parties that close to a hearing.

I had no idea that such a settlement was in the offing. And it just popped into my in-box on Friday afternoon like an electric shock. And, you know, I don't know how it hit the Commission. You, obviously, didn't know it was coming. But it's just unfair.

CHAIRMAN GOLDNER: Okay. And, Attorney

Kreis, if you could expand a little bit. There was, in one of the filings, it might have been an Eversource filing, there was -- it seemed an invitation for all the parties to participate in the process. And, according to the filing, as I recall, "CENH participated, but didn't sign off", and "the OCA decided not to participate."

So, I'm just hoping you could expand on the process, or lack thereof, from your perspective?

MR. KREIS: Well, I don't think it's appropriate for there to be a lot of discussion in front of the Commission about settlement conversations. But I will say that our prefiled testimony is very clear. We think that the Company has not even begun to comply with the statute that governs least cost integrated resource plans.

And there really didn't seem to me to be anything that could have been said or talked about in the course of settlement agreements -- in the course of settlement discussions that would address that fundamental contention that we have, and that we will put before the Commission

today. So, therefore, I made that clear to all the parties. I've made that clear to the Commission and all of the parties through every minute of the two and a half years that this proceeding has been pending.

CHAIRMAN GOLDNER: And do you, Attorney Kreis, have a proposed remedy for this late-filed Partial Settlement?

MR. KREIS: I think the Commission should ignore it.

CHAIRMAN GOLDNER: Okay. Very good. And I want to give the other parties the opportunity to comment. Attorney Emerson, would you have any comments on this?

MR. EMERSON: No. We take no position on the Settlement.

CHAIRMAN GOLDNER: Okay. Very good. Attorney Schwarzer?

MS. SCHWARZER: Yes. Thank you, Mr. Chairman.

I would like to draw the Commission's attention to the letter that was filed with the Settlement Agreement, where the Company explained, and the Department supports this

explanation, that the criteria in Administrative Rule 203.20(e) were met, because the Settlement was filed as soon it was possible to file it. So, the delay was unavoidable.

The issues themselves were identified in a January 19th filing, which would have alerted the OCA to the issues, even given that the OCA elected not to participate in settlement discussions. And had the OCA wished to inform itself of what was going forward, it had an opportunity to do that.

Allowing the Settlement Agreement supports the orderly and efficient conduct of this hearing. And it would be sort of artificial and an undue hardship on the two parties that were able to reach agreement to strike the terms of the Settlement Agreement, when it was two business days late, which is only 48 hours. There was ample opportunity for further discussion.

Thank you.

CHAIRMAN GOLDNER: Okay. Thank you, Attorney Schwarzer. Attorney Ralston?

MS. RALSTON: I would just echo

everything that Ms. Schwarzer just explained. It is set forth in our letter.

In addition to DOE's January 19th letter, the Company filed its own status update on January 19th, also indicating that the Company was willing to work with DOE on the two recommendations that they have. So, again, there was ample notice that these issues were being -- at least being considered by the parties. So, there shouldn't -- it shouldn't be such a surprise, I don't think, to anyone that this is where we ended up.

CHAIRMAN GOLDNER: Okay.

MS. RALSTON: And our witness -- and I would say also, our witness panel is prepared to answer any questions that any party might have about the terms of the Settlement Agreement, if it is allowed into the record today.

CHAIRMAN GOLDNER: Okay. Very good.

MR. KREIS: Could I have an opportunity to respond to that?

CHAIRMAN GOLDNER: Of course.

MR. KREIS: So, of course, the Company, Eversource, has made clear to the Commission and

the parties that there are certain issues that are important in this docket. And one of them is the N-1 Planning Standard, and the other one has to do with non-wires alternatives, and the extent to which the Company either does or does not take those into consideration in its planning process. But the fact that those issues are significant and contentious in this docket does not substitute for giving parties adequate notice that there has been a settlement of those issues among or between the two most important parties in the docket.

And, you know, there is a, what is it, a four- or five-page single-spaced appendix to the Settlement that lays out a "Eversource Energy NWA Investigation Plan". That's a very elaborate undertaking. And asking the parties to process that, and determine whether that is something reasonable and appropriate in such a short span of time, just isn't appropriate.

I would also like to point out that the Settlement Agreement is a faux, f-a-u-x, settlement agreement, in that what it really does is lay out a bunch of, I guess, terms and

conditions that might or might not be binding in the future, even though the boilerplate at the end of the Settlement itself, in Section 5.3, says "This Settlement Agreement doesn't create any precedent for anything."

So, in a way, the Settlement is really just a publicity stunt, and really ought to be ignored on that basis as well.

CHAIRMAN GOLDNER: All right. Okay. I think, is there anything else anyone would like to add?

Attorney Schwarzer.

MS. SCHWARZER: Thank you, Mr. Chairman.

The Department certainly does not agree with the representation that this is in any way a "publicity stunt". The language Attorney Kreis has quoted is standard settlement language.

I think the framework he's suggested seems to allow the OCA to slam the door on settlement, if it wishes, for all parties, as soon as it decides not to participate, and that would seem unfortunate.

Thank you.

CHAIRMAN GOLDNER: Would Attorney Kreis be open to, I think there is a five-day rule, right? So, that would put us on Thursday. Does Attorney Kreis want to hear about the Settlement on Thursday? Would that be a remedy that the OCA would seek?

MR. KREIS: No.

CHAIRMAN GOLDNER: Okay. So, to summarize you, your position is to ignore the -- let's call it the "late-filed Partial Settlement", is your position?

MR. KREIS: That is my position. And I would like to add that I certainly have no objection to the witnesses, the Company or the Department, talking about/offering testimony about the N-1 standard, as well as non-wires alternatives. As I said before, those issues are clearly germane to this proceeding.

And the reason I don't recommend or suggest just extending this hearing into Thursday is, frankly, this docket has been pending, as I said before, for two and a half years. And, you know, life is complicated and busy, and a docket like this should proceed in an orderly fashion.

So, I don't know about the other people in the room, but I have other things I have on my schedule for Thursday. I was not planning on being in this hearing room all day Thursday arguing about this Settlement Agreement.

I do not in any way suggest that it is improper for two parties in a docket to enter into a partial settlement agreement that resolves some issues, and includes just those two parties, and not other parties. That's fine. What I object to is the disorder and surprise.

CHAIRMAN GOLDNER: Okay. Very good. So, at this time, we will defer ruling on this particular issue until later in the day. And we'll proceed, in the spirit of getting everything through by end of day Wednesday, to the next topic.

So, the next housekeeping topic is the witness list substitution. We see that a proposed witness list was also filed on March 2nd, which included Eversource, DOE, OCA, and Clean Energy New Hampshire witnesses. The Commission also notes that Elli Ntakou is being offered as a substitute for Tracy Gionfriddo, on

behalf of Eversource, due to unforeseen circumstances.

Are there any objections to this witness substitution?

MR. KREIS: Yes, there are, Mr. Chairman.

And, to the extent that that witness appears on a witness list that's characterized as a "Joint Witness List", then it has been filed under incorrect pretenses by whoever filed that document, because we did not agree to any witness substitution.

And, as I said in my letter, it's fine that one of the witnesses that was originally tendered isn't available. You know, that happens, and that person has personal circumstances that preclude the witness from participating today.

But that doesn't give Eversource license to just, you know, sub in other witnesses. This is not a baseball game, where you can pull people off the bench at will and have them, you know, take their at-bats.

This is a contested administrative

proceeding, in which you file -- you present prefiled direct written testimony by your witnesses, and those witnesses are subject to cross-examination. Not other witnesses at the option and election of parties that want to do substitutions as if this were some kind of a baseball game.

It is Spring Training. That's why baseball is on my mind.

CHAIRMAN GOLDNER: Very good. Attorney Schwarzer, would you like to address?

MS. SCHWARZER: I would defer to the Company first, and then I would like to make remarks. Thank you.

CHAIRMAN GOLDNER: Okay.

MS. RALSTON: Thank you.

I would acknowledge -- well, first, I would just say, I did file the updated witness list. And, so, I apologize if it was misleading. And the title of the document originally was "Joint", but it was only -- the Company unilaterally updated it to recognize the fact that Mr. Gionfriddo had a death in her family and is not able to be here today.

I can certainly acknowledge Mr. Kreis's frustration with the last-minute change. But, unfortunately, under the circumstances, a late change was our only option. I did alert the other counsel as soon as I was aware of the situation that this is what we were facing.

And we have offered Ms. Ntakou, I'm sorry, as a substitute, in an attempt to have a more efficient hearing. The remainder of the panel may be able to answer some of the questions that otherwise would have been answered by Ms. Gionfriddo. But the witness we are offering today is a member of the Resilience and Reliability Group, which is performing a climate change study. And Ms. Gionfriddo was our environmental impact witness originally. So, we just felt there were some overlap in their areas of expertise that might be beneficial to the Commission and the other parties.

Ultimately, if the Commission wishes, you know, just operate, go forward without Ms. Gionfriddo or any other witness, the panel will do its best to answer what it can, but there may be some limitations with that particular subject

matter.

CHAIRMAN GOLDNER: Okay. Attorney Kreis, any -- or, Attorney Schwarzer, please go next.

MS. SCHWARZER: Thank you, Mr. Chairman.

The Department has no objection to the witness substitution. Certainly, life is unpredictable, people move and take different jobs. I assume, without knowing, that this witness will be able to adopt some or all of Ms. Gionfriddo's prefiled testimony. But, even if that were not the case, there are tools available to the Commission, such as record requests, to pursue any items that is of concern to the parties due to Ms. Gionfriddo's absence. So, we have no objection.

CHAIRMAN GOLDNER: Okay. Thank you. Attorney Emerson, I just want to make sure?

[No verbal response.]

CHAIRMAN GOLDNER: Okay. Attorney Kreis.

MR. KREIS: Well, again, Mr. Chairman, you know, Eversource has mischaracterized the

nature of this proceeding today. This is not a free-wheeling inquiry, where the Commissioners or anybody else in the room are free to just ask any questions about anything that might occur to them.

This is a trial-like proceeding that must proceed in an orderly fashion. This is a fully contested case. And bringing in whatever witnesses you feel like, and answering whatever questions you think might be interesting or appropriate, that is not the way this process works. This is supposed to be an orderly process, where parties come into the room knowing who's going to testify, what they're going to testify to, what are the issues.

And, if Eversource can't meet its burden of demonstrating to the Commission that their Least Cost Integrated Resource Plan complies with the statute, then that is their problem. It is not my problem or your problem.

CHAIRMAN GOLDNER: Okay. Any other comments on the topic?

[No verbal response.]

CHAIRMAN GOLDNER: Okay. Very good.

Having heard everything under the circumstances, I'll allow the witness today, and we'll proceed with the substitute witness.

Let's move to confidentiality. For confidentiality, it's the Commission's expectation that a ruling on confidentiality will be embedded in the Commission's final order in this proceeding.

In the meantime, we expect the parties to abide by the requirements of Puc 203.08, and alert the Commission to any potential discussion regarding confidential material, and alert the court reporter as well.

Okay. Moving on to scope. I'd like Eversource to present the case in chief on the LCIRP in general. That is the LCIRP meeting the statutory standards for Commission approval, followed by DOE, OCA, and CENH witnesses, with full cross-examination for all parties.

I'll pause there and see if there's any concerns with that approach today? I think that's what we talked about.

Attorney Schwarzer.

MS. SCHWARZER: Mr. Chairman, I had

wanted to make a comment on a preliminary matter, and I don't want to interrupt. But I just wanted -- didn't want to proceed directly, if I was out of turn.

CHAIRMAN GOLDNER: Absolutely. And I will be sure, and, if we get to opening statements and I have not addressed it yet, please remind me again.

MS. SCHWARZER: Thank you.

CHAIRMAN GOLDNER: But I think I'm still in sequence at this point. So, I wanted to move to exhibits next, and I will take on those additional matters here in a moment.

So, regarding the proposed exhibits, we have 22 proposed exhibits, including the proposed Exhibit 22, which is the late-filed Partial Settlement Agreement.

Are there any objections to Exhibits 1 through 21 at the present time?

[No verbal response.]

CHAIRMAN GOLDNER: Everybody's okay with Exhibits 2 through 21. Okay.

Okay. All right. Well, let's move back to the additional issues.

So, Attorney Schwarzer, you wanted to address the pending or a pending investigation?

MS. SCHWARZER: I do. I do. Thank you, Mr. Chairman, and Commissioners Simpson and Chattopadhyay.

I would like to bring to the Commission's attention a preliminary matter that is new, stemming from the Division of the PUC and the DOE. As explained in our January 17th technical statement, which is Exhibit 20 in this docket, Bates Page 004, under the topic "Interconnection Criteria for DERs", the New Hampshire Legislature directed the Department to open an investigation into interconnection for distributed energy resources, or DER. We were directed to do this by early December of 2022. And the DOE docket is IP 22-001. A link to this docket appears in the Settlement Agreement attachment, Appendix A, Footnote 3, which provides a scope of the matters to be considered in that docket.

And, as a consequence, in this particular docket, the Department has no position on the N-1 interconnection standard as applied to

DER. We've taken a position on other -- the application of an N-1 standard in other areas.

DOE's position is contingent upon the outcome of that investigation as reported back to the Legislature at a future date. And, so, we wanted to bring this to the Commission's attention, as I may raise this periodically throughout testimony, or witnesses may respond with respect to that concern.

CHAIRMAN GOLDNER: Okay.

MS. SCHWARZER: Thank you.

CHAIRMAN GOLDNER: Okay. That sounds reasonable.

Let's move to the post-hearing brief question. And I think -- and, yes, let's hear on the post-hearing brief question.

Attorney Kreis, did you want to perhaps lead with addressing the post-hearing brief question that you brought up?

MR. KREIS: Well, as I said, that's often an issue that gets addressed at the very end of the hearing. I thought it would be helpful if you address it at the beginning of the hearing, because it would be useful perhaps to

the attorneys in the case, if not everybody else, to know that that is what is at the end of this particular rainbow.

This is unusual, this case, the way it is being presented to the Commission, in that it's fully contested. And, to be frank, there is a high likelihood of rehearing, followed by notice of appeal to the New Hampshire Supreme Court. So, this is a docket in which it's important for the parties and, ultimately, the Commission, to dot all the t's *[sic]* and cross all the i's *[sic]*. And, for that reason, I think that level of precision and comprehensiveness at the end of the hearing is appropriate.

CHAIRMAN GOLDNER: Thank you. Excuse me. Attorney Kreis, I did hear you. I was able to multiplex.

Would the other parties prefer post-hearing briefs or would they prefer a different path forward?

Attorney Emerson.

MR. EMERSON: I absolutely prefer a post-hearing brief. I think it's easier for us to present sort of a coherent case for the

Commission. And I actually think it's more useful for the Commission, in that you will have written submissions that may help base your ultimate final order in the docket.

CHAIRMAN GOLDNER: Thank you, Attorney Emerson. Attorney Schwarzer?

MS. SCHWARZER: Thank you, Mr. Chairman.

Inasmuch as it's not clear to me what the topics would be, perhaps there could be a sequential order of post-hearing briefs, so that there might be an opportunity for the Department to respond to any concerns that the OCA may anticipate raising.

CHAIRMAN GOLDNER: Attorney Ralston?

MS. RALSTON: The Company is amenable to post-hearing briefs. I guess I would just want to clarify. Would there be one set of briefs or was Attorney Kreis anticipating initial and reply briefs?

I think we would probably prefer reply briefs. They don't have to be sequential, but an opportunity to respond would be appreciated.

CHAIRMAN GOLDNER: Attorney Kreis?

MR. KREIS: That seems quite reasonable to me in the circumstances.

CHAIRMAN GOLDNER: Okay. Very good. And then, I think, just wrapping up on the issues, before we move on to opening statements, Attorney Emerson, I think you wanted to discuss this question of a surrebuttal?

MR. EMERSON: Our request is for our witness, Chris Skoglund, to be able to, prior to cross-examination by the other parties, be able to offer five to ten minutes of surrebuttal testimony. It will be responsive to both the supplemental and rebuttal testimony filed by Eversource. And it will be limited to issues of the interconnection, the N-1 standard that's addressed in the supplemental and rebuttal testimony.

I did discuss it with the parties. And I'll let them speak for themselves whether they object to it or not. But it was discussed prior to the hearing today.

So, thank you.

CHAIRMAN GOLDNER: Okay. Would the parties care to comment on the "surrebuttal"

concept by Attorney Emerson? Any comments?

[No verbal response.]

CHAIRMAN GOLDNER: Everyone's in support?

Attorney Schwarzer.

MS. SCHWARZER: Thank you.

Mr. Chairman, the concern that the Department has is that, given the IP 22-001 docket, where we are conducting an investigation with regard to interconnection, the Department will be both unable to comment substantively on the substance of the testimony, although we don't object, *per se*, to him making statements.

The larger concern is that I believe the theme will be, which we discussed this morning, that this docket should be enlarged to expand the questions that Mr. Skoglund and Clean Energy New Hampshire wish to raise. And, in the opinion of the Department, although I'd appreciate an opportunity to comment after his surrebuttal, those substantive issues are best resolved and have been assigned to the separate IP 22-001 docket.

And it would be a strange entanglement

and inappropriate to expand this docket to address, in a 2020 LCIRP, matters that have been brought to the fore in a separate Department investigation, investigatory docket.

So, I just want to make that point. And perhaps, at the end of his testimony, I'll have an opportunity to make further comment legally.

Thank you.

MR. KREIS: Could I comment about that?

CHAIRMAN GOLDNER: Yes, please.

MR. KREIS: I appreciate that the Department has an open investigation about interconnection standards. I don't understand at all what that has to do with what we are here to do today.

Ultimately, the Commission faces a "yes" or "no" decision: "Does it or does it not accept this Company's Least Cost Integrated Resource Plan?"

In it, I think, are embedded references to the N-1 interconnection standard, which is rather controversial, for reasons that I suppose will be heard about today and tomorrow.

The fact that the Legislature has directed the Department of Energy to conduct, again, an informal investigation of the same issue is, I think, neither here nor there. I don't understand why the Department thinks it's constrained from commenting on anything. And I don't understand as well why that bears in any real way on whether or not the Company has met its burden to demonstrate to you, the Commission, that it has complied with the Least Cost Integrated Resource Planning statute.

So, I think this is a nonissue.

CHAIRMAN GOLDNER: Attorney Emerson? Sorry. Attorney Emerson?

MR. EMERSON: I agree with all that. His intent was not to make any legal arguments, but really just to point out sort of information that's been conveyed recently back to Clean Energy New Hampshire from its members about the impact, especially of cost allocation, from some rather expensive interconnections. Which I believe is helpful information for the Commission to have, in order to make decisions in this docket.

Clearly, the N-1 interconnection standard has been raised and is an issue. And I respect and understand the Department of Energy may feel like it has sensitivities in taking positions on that standard in this docket. But I don't think that should constrain the other parties from discussing something properly before the Commission in this docket.

Thank you.

CHAIRMAN GOLDNER: Thank you, Attorney Emerson.

Okay. For now, I'm going to take this issue under advisement. What we'll do is we'll go through the opening statements --

MS. RALSTON: Can I just add one thing? Sorry.

CHAIRMAN GOLDNER: Of course. Yes.

MS. RALSTON: The Company doesn't object to Clean Energy New Hampshire's request for surrebuttal. But I did, and I raised this with Attorney Emerson this morning, without knowing what the new information, I did say that the Company may request a short recess following that surrebuttal, just so I can discuss with our

witnesses, before we begin any cross-examination of Mr. Skoglund, if that would be acceptable to the Commission?

CHAIRMAN GOLDNER: Very good. And I think we can all expect numerous recesses today.

MS. RALSTON: Yes.

CHAIRMAN GOLDNER: So, that won't impair the proceeding, and I think it will only help the proceeding.

So, we'll tidy things up after the break. What I'd like to do now is go to opening statements. Then, we will take a short recess. We'll tidy things up, and then we'll move into Eversource's direct.

So, Attorney Schwarzer, before we move to opening, one last comment.

MS. SCHWARZER: Thank you, Mr. Chairman.

I did want to bring to the Commission's attention that the OCA was frustrated that the review of the 2020 LCIRP had taken what he termed "an excessive amount of time", and yet, at this moment, seems to be supporting enlarging the scope of the docket to include interconnection

for N-1, enlarging the duration of the proceeding.

So, I just thought that was somewhat contradictory, and wanted to bring that to the Commission's attention.

CHAIRMAN GOLDNER: But I think, and, Attorney Schwarzer, you can comment on this please, but I think the N-1 is already a part of the LCIRP proceeding. So, I don't think it's we're expanding anything. That's just part of what the Commission needs to look at today, either in the context of the Partial Settlement, or not.

MS. SCHWARZER: I believe N-1 is new in terms of distribution planning -- it's not new in terms of distribution planning, but is new in terms of DER. And I'm anticipating what I believe Clean Energy New Hampshire's position might be.

And, so, that's just a concern. It may not be fruitful.

CHAIRMAN GOLDNER: Okay.

MS. SCHWARZER: Thank you.

CHAIRMAN GOLDNER: Okay. Thank you. I

understand your input.

Let's move to opening statements. And then, again, we'll take a short recess after opening statements.

MS. RALSTON: May I ask one tactical question?

CHAIRMAN GOLDNER: Oh, of course. Yes.

MS. RALSTON: Sorry. I apologize. Do you anticipate reaching a conclusion about the Settlement Agreement when we take the recess? I just want to know how to address it with the witnesses during direct examination, if we should address the Settlement or not?

CHAIRMAN GOLDNER: I think that's a very good question. I don't know the answer.

So, let's do this. Let's take a recess now. Then, we'll come back for opening statements. And, so, that way, you can at least have ten seconds to prepare.

MS. RALSTON: Yes. I appreciate that.

CHAIRMAN GOLDNER: All right. Thank you. So, we'll take a quick recess, returning at 10:20, and beginning with opening statements. Thank you. That's ten minutes.

(Recess taken at 10:10 a.m., and the hearing resumed at 10:24 a.m.)

CHAIRMAN GOLDNER: Okay. Back on the record.

As far as the briefs, the idea or the proposal was to have a brief and a reply brief. You know, we support that, I support that, and we'll move forward with that. Before the end of the proceeding, we'll provide a date for the briefing date and the reply date. And, as a preview of coming attractions, please think about how much time you'd like for those briefs and reply briefs, and we'll work through that before the -- at the end of the proceeding.

As far as the -- as far as the Settlement, we'll rule on that at the end of today, or by the end of today. And, if we rule in favor of hearing on the Settlement, we would hear the Settlement tomorrow.

I want to confirm, there was some question from counsel as far as the witness substitution. So, I'll just confirm on the record, the witness substitution is approved.

And, as far as the CENH surrebuttal,

that's also -- let's also move forward with that, and we agree to the surrebuttal. So, thank you, Mr. Emerson, for offering that.

And, if there is no questions, we can move to opening statements? There is a question.

MS. SCHWARZER: Mr. Chairman, I apologize.

But, to the extent that the Commission would like to hear about the Settlement Agreement tomorrow, does the Commission anticipate that the parties will still testify to their positions on NWA thresholds? Because the prefiled testimony shows the parties with positions that have been resolved in the Settlement in a particular way, which I believe both sides now support.

CHAIRMAN GOLDNER: Yes. I think my answer to that is that we'll bifurcate the proceeding. So, this is -- the proceeding today is really on the LCIRP and amendments that were offered over the course of the proceeding. And, if there is any discussion on the Settlement, we'll defer that to tomorrow, if we agree to hear it.

MS. SCHWARZER: I apologize, but it's

not clear to me. Prior to the Settlement Agreement, the Department had concerns about the Company's NWA thresholds. And I don't need to reach them today, if the entire topic has been deferred until tomorrow.

CHAIRMAN GOLDNER: I would encourage you to bring up the topic today, because it might not be heard tomorrow. So, in other words, the LCIRP, in total, everything is in play. NWA is in play, N-1 is in play, everything is in play today, and we may or may not hear the Settlement tomorrow.

MS. SCHWARZER: And could we have a very brief, I'm sorry, just five minutes, to confer with the Company?

CHAIRMAN GOLDNER: Of course.

MS. RALSTON: May I just ask a clarifying question, I guess, as well?

CHAIRMAN GOLDNER: Sure.

MS. RALSTON: The terms of the proposed Settlement Agreement are marked as "Exhibit 22", and that information is not otherwise in the record. And, so, I think part of what Ms. Schwarzer may be struggling with is, I'm not sure

if my witnesses, if they get a question about what the NWA thresholds are, if they should be stating that they are what we have proposed in Exhibit 22 or if we should be sticking with what's in the record?

I guess we're just -- I'm a little bit confused of, I don't want to have them referencing an exhibit that you may be rejecting. I just want to make sure, before we begin, I don't want there to be a lot of objections or confusion.

CHAIRMAN GOLDNER: Yes. I think the idea is to move forward with Exhibits 1 through 21 today.

MS. RALSTON: Uh-huh.

CHAIRMAN GOLDNER: And, if we accept Exhibit 22, that would be heard tomorrow.

MS. RALSTON: Okay.

CHAIRMAN GOLDNER: Any other questions, concerns?

MR. KREIS: Mr. Chairman, at the risk of belaboring this discussion, a sympathetic colleague pointed out to me that, if I look at Exhibit 21, which is a letter from the Department

of Energy to the Commission, it actually says that the "Department did not anticipate filing a settlement agreement."

So, you know, if the question is "was anybody sandbagged by the filing of a settlement agreement two days before the hearing, two business days?" I would urge the Commission to look at that letter.

CHAIRMAN GOLDNER: Okay.

MS. SCHWARZER: Mr. Chairman?

CHAIRMAN GOLDNER: Yes.

MS. SCHWARZER: I don't want to try the Commission's patience on this topic. And I apologize if I'm slow to pick up what your hope is that we do.

Exhibit 21 was truthful on the date it was filed. But it would be unfortunate if companies were -- if parties were precluded from reaching settlement based on a status report. I believe that would be inappropriate.

And I hope that what the Commission -- what the Commission is asking us to do is not to revert to our positions pre-Settlement? It's just, I was not expecting to challenge

Eversource's position as it stood before the filing of the Settlement Agreement, because we had reached settlement. Is that what the Commission wants us to do?

CHAIRMAN GOLDNER: I'm not sure I understand your question. Try me one more time.

MS. SCHWARZER: Sure. Prior to filing the Settlement Agreement, my understanding of the Company's position was that they felt that an NWA, non-wires alternative, threshold of $3 million dollars and three years before investigation occurred was consistent with the statute. And the Department felt that it was not consistent with the statute.

However, having reached a settlement agreement, which proposes an investigation to move in a direction that the Department believes will show that a lower threshold is better and consistent, and that that process of investigation, and using data periodically on July 24th, July 25th, and December 27th, to shape and refine the NWA thresholds and the definition of the "Aging Project" category, we believe that is consistent with the LCIRP.

However, if you are asking us and directing us not to address any of the context in Appendix A, I feel that, as the Department, I'm left looking at the Company perhaps now asserting or retroactively renewing its initial position that the NWA threshold of $3 million and three years was correct, even though I believe they have reached agreement to the contrary.

So, I apologize, but it is an awkward position for the Department.

CMSR. SIMPSON: Could I just ask a question?

CHAIRMAN GOLDNER: Please. Commissioner Simpson.

CMSR. SIMPSON: So, in your view, Attorney Schwarzer, is this a comprehensive Settlement Agreement that you've entered in as "Exhibit 22"?

MS. SCHWARZER: It is a comprehensive Settlement Agreement with regard to NWA thresholds and ongoing application of a process to involve an appropriate standard.

CMSR. SIMPSON: And can you square that issue with the issue you raised pertaining to the

ongoing investigation at the Department?

MS. SCHWARZER: Yes. Because the issue in Docket 22-001 that we are carving out, not commenting on at this time, but making it contingent on the result of the investigation in the parallel DOE docket, is distinct from, it has only to do with how the N-1 interconnection standard is applied to DER. And the Appendix A has to do with the NWA thresholds and categories the Company will apply to consider the viability of NWA projects. And, so, that is the appendix, the Settlement, is much larger in scope with regard to the standards for the LCIRP, and the little exclusion with regard to N-1 is applied only to DER. That's the only thing we're unwilling to address. It's just something upon which we can express no opinion. But I see those as pretty distinct.

CHAIRMAN GOLDNER: Attorney Kreis, would you like to comment?

MR. KREIS: I would. I fear that we're sort of wondering here into some kind of alternative universe.

I just want to remind the Commission

that what is pending before you is the Company's Least Cost "Integrated" Resource Plan. And the question is "whether or not to approve that Plan?" Which is, as far as I can tell, a "yes" or "no" question.

And the word -- I'm going to highlight the "i" word, "integrated". Which means that, what the Commission is supposed to be looking at is, in the totality, has this Company -- is this Company planning correctly, and did it elect to apply a set of options correctly in a least cost fashion, in light of the state's energy policy?

And, so, you know, various parties are seeking to lure you into some other kind of inquiry; that is inappropriate. And I think the Settlement Agreement is an attempt, essentially, to distract you from the task you actually have to perform, which is to determine whether to approve the Eversource Least Cost Plan.

CHAIRMAN GOLDNER: All right. So, we're going to move forward like this. So, I'll say that the DOE needs to deal with the issue in its own discretion. I agree with Attorney Kreis, and let's move forward accordingly.

So, let's -- so, without any further adieu, let's move to opening statements, beginning with the Company.

MS. RALSTON: Sure. Thank you. I'll keep it brief.

The record in this proceeding, including the testimony from the Company's witnesses that we're about to hear, will demonstrate that the 2020 LCIRP, inclusive of the October 2022 supplement, address and are consistent with the statutory requirements of RSA 378:38 and 39.

I do expect that we will hear arguments over the next two days from OCA and Clean Energy New Hampshire that the 2020 -- the 2020 LCIRP is insufficient and that its contents must be expanded to address a variety of topics, including grid modernization and electrification, for example.

It will be important to keep in mind that an LCIRP is a snapshot in time, but that the Company's planning processes are always evolving and changing. To that end, the Company has acknowledged that the electric grid is undergoing

a period of transition, and has provided some concrete examples for how the Company is addressing that transition.

In the same way that the Company has been able to work collaboratively with DOE to propose adjustments to its non-wires alternative framework ahead of the next LCIRP filing, the Company has also proposed a working group to receive and address stakeholder input regarding how to account for this grid transition. How best to address this transition is an important consideration ahead of the next LCIRP filing, but it should not preclude approval of the 2020 LCIRP.

Thank you.

CHAIRMAN GOLDNER: I just want to clarify, Attorney Ralston, that you acknowledge -- you mentioned "378:38 and 39", and we're in agreement on that. The Order of Notice also talked about "Commission Order 26,362", from June 3rd, 2020. You would agree that was also part of the proceeding?

MS. RALSTON: I would agree. Thank you.

CHAIRMAN GOLDNER: Thank you. Okay. Very good. The Department of Energy.

MS. SCHWARZER: Thank you, Mr. Chairman.

The Department considers Eversource's 2020 LCIRP Plan, as supplemented in October to address the 378:39 increases, as largely compliant with the LCIRP statutes.

The Department takes exception to the Company's NWA threshold as it currently is defined, as a $3 million project threshold. We have concerns about the scope of projects the Company considers eligible for NWA evaluation.

With that exception, the Department supports what the Company has filed as compliant with the statute.

Thank you.

CHAIRMAN GOLDNER: Thank you, Attorney Schwarzer. And we'll move to the Office of the Consumer Advocate.

MR. KREIS: Thank you, Mr. Chairman. I am going to try to be extremely brief, because I think it's time to hear some evidence.

On Thursday of this week, the House of

Representatives, over at the Statehouse, is going to vote on a bill to repeal the entire Least Cost Integrated Resource Planning statute. And although I oppose the bill, I understand why the Legislature is thinking of such a course of action, because Least Cost Integrated Resource Planning, and the Commission's enforcement of the statute, has become a chaotic mess. And, as a result, you have the situation we are in here today; two and a half years into the Company's filing of its 2020 LCIRP, we are still here arguing about or looking at a plan that was filed, and then amended, and then amended again.

And, even though the Commission has entertained those amendments, the reality is that this Company is still, I think with the encouragement of the Commission, basically, ignoring what the Least Cost Integrated Resource Planning statute actually requires a utility to do. This is not rocket science. Here is what a utility is supposed to do.

I agree that -- I agree with Eversource that an LCIRP is a snapshot in time. And what is it a snapshot of? It is a snapshot of how the

Company intends to deploy its resources over the period covered by the plan, in order to advance the state's official energy policy, as articulated in Section 37 of the statute.

That is not what this Company did here. And we will present our witnesses, who will explain, again, why the Company hasn't done that. I was tempted to rehash or maybe preview those points here, but I won't waste time doing that.

And, so, at the end of the day, the Commission has to reject the Plan that has been presented to it. The Department of Energy implicitly concedes that you should reject the Plan by characterizing it as "largely compliant."

Well, this is not a warm, fuzzy, informal, amorphous review of something. As I've now said at least twice already, and will now say again, this presents a "yes" or "no" question to the Commission: "Do you approve the Plan or do you not approve the Plan?" And, in the opinion of the OCA, you must reject the Least Cost Integrated Resource Plan presented by this utility.

Thank you.

CHAIRMAN GOLDNER: Thank you, Attorney Kreis. Sorry. Thank you, Attorney Kreis. Attorney Emerson.

MR. EMERSON: Thank you.

I first want to thank the Commission for letting the Clean Energy New Hampshire intervene late in this docket. We certainly didn't have experience with the totality of the process. We came in at the latter half of the docket.

And I think, from Clean Energy New Hampshire's observation, there were two main concerns it had with the Plan. One was with the Plan itself. It certainly did not take into account the significant progress that New Hampshire has made over the last couple of years, when it came to both integrating DER and energy efficiency into it. And I think the Company acknowledges that, just based on the timing of the filing.

The other thing that Clean Energy New Hampshire was concerned about, and filed testimony, is that a lot of the solutions to constraints on the system or growth were

traditional utility solutions. They were not non-wires alternatives. Things which are, you know, by the terms of the statute, required to be incorporated into their planning process. So, that's the one, you know, the first major concern.

The second was really focused on the interconnection standard, and that is a shift from what we recognize as a regional bulk transmission standard, to one that's being applied on the distribution level, and one that's being applied to DER and other interconnected facilities.

That's a concern mostly because it was not a process which was really exposed to New Hampshire, it was imposed on New Hampshire. The implications of that are serious. It has large and significant cost consequences for entities that are attempting to interconnect to the system. And systems or facilities that are important for helping, in times of high electric prices, can help moderate prices like that. So, that's really the other major concern of the Plan.

In testimony, Eversource has already acknowledged that the Plan is out-of-date. And I think the thought was "well, they can incorporate all these other things into the next version of it." But that is six of one or half a dozen of the other.

The Plan that's before is out-of-date. It doesn't reflect the current State of New Hampshire. And Clean Energy New Hampshire thinks it should be rejected.

Thank you.

CHAIRMAN GOLDNER: Thank you, Attorney Emerson.

Okay. Well, let's move to the next phase. And I'd like Mr. Patnaude to please swear in the Company witnesses.

(Whereupon ***Russel Johnson, Lavelle Freeman, Gerhard Walker, Matthew Cosgro, Elli Ntakou, Mina Moawad,*** and ***James DiLuca*** were duly sworn by the Court Reporter.)

CHAIRMAN GOLDNER: Okay. Very good. And, we'll begin with and Attorney Ralston, and direct.

MS. RALSTON: Thank you.

RUSSEL JOHNSON, SWORN

LAVELLE FREEMAN, SWORN

GERHARD WALKER, SWORN

MATTHEW COSGRO, SWORN

ELLI NTAKOU, SWORN

MINA MOAWAD, SWORN

JAMES DiLUCA, SWORN

DIRECT EXAMINATION

BY MS. RALSTON:

Q I'm going to begin with Mr. Johnson. Would you please state your full name, Company position, and your responsibilities?

A (Johnson) Sure. My name is Russel Johnson. I am the Director of Distribution Engineering for New Hampshire. I'm responsible for optimizing the performance of the distribution system assets in New Hampshire, and ensuring that customer service and reliability needs are met for those customers.

Q And are you familiar with the exhibits that have been marked as "Exhibit 1" through "6", which provide the Company's 2020 LCIRP?

A (Johnson) Yes, I am.

Q And what parts of the Company's LCIRP are you responsible for?
A (Johnson) My primary responsibilities with respect to the Company's LCIRP are for distribution line related projects and programs needed to serve our customers safely and reliably.
Q Are you also familiar with the exhibit marked as "Exhibit 7", which is the Company's rebuttal testimony that you co-sponsored with Mr. Freeman and Mr. Walker, responding to direct testimony filed by the Department of Energy, Office of Consumer Advocate, and Clean Energy New Hampshire?
A (Johnson) Yes, I am.
Q And are you familiar with the exhibit marked as "Exhibit 8", which is the Company's supplemental testimony and supporting attachments that you co-sponsored with Mr. Freeman, Mr. Walker, Mr. Cosgro, and Tracy Gionfriddo?
A (Johnson) Yes, I am.
Q And are you familiar with Exhibits 9 through 15, which provide the Company's responses to data requests issued by the Department of Energy and

Clean Energy New Hampshire, and that includes responses you have sponsored?

A (Johnson) Yes, I am.

Q Do you have any corrections or amendments to Exhibits 1 through 15?

A (Johnson) No, I do not.

Q And are you adopting those portions of Exhibit 1 through 15 that you have sponsored as part of your sworn testimony today?

A (Johnson) Yes, I am.

Q Thank you. Mr. Freeman, would you please state your full name, Company position, and responsibilities?

A (Freeman) Good morning. My name is Lavelle Freeman. I'm Director of Distribution System Planning at Eversource. In that role, I'm responsible for overseeing the system planning and distributed energy resource interconnection activities across our Company footprint, including New Hampshire.

Q Are you familiar with the exhibits marked as "Exhibit 1" through "6", which provide the Company's 2020 LCIRP?

A (Freeman) Yes, I am.

Q And what parts of the Company's LCIRP are you responsible for?
A (Freeman) My primary responsibilities with respect to the Company's LCIRP are bulk distribution system planning, including grid needs assessment, joint use planning, distribution planning criteria. It also includes distributed energy resource planning, including system impact studies, and interconnection standards.
Q Are you also familiar with the exhibit marked as "Exhibit 7", which is the Company's rebuttal testimony that you co-sponsored with Mr. Johnson and Mr. Walker, responding to direct testimony filed by Department of Energy, Office of Consumer Advocate, and Clean Energy New Hampshire?
A (Freeman) Yes, I am.
Q And are you familiar with the exhibit marked as "Exhibit 8", which is the Company's supplemental testimony and supporting attachments that you co-sponsored with Mr. Johnson, Mr. Walker, Mr. Cosgro, and Tracy Gionfriddo?
A (Freeman) Yes, I am.
Q And are you familiar with Exhibits 9 through 15,

which provide the Company's responses to data requests issued by DOE and Clean Energy New Hampshire, and include responses you have sponsored?

A (Freeman) Yes, I am.

Q Do you have any corrections or amendments to Exhibits 1 through 15?

A (Freeman) No, I do not.

Q And are you adopting those portions of Exhibits 1 through 15 that you have sponsored as part of your sworn testimony today?

A (Freeman) Yes, I am.

Q Thank you. Mr. Walker, would you please state your full name, Company position, and responsibilities?

A (Walker) Yes. Good morning. My name is Gerhard Walker. I am the Manager for Advanced Forecasting and Modeling at Eversource. I am responsible for overseeing the advanced foresting and modeling efforts to transition both the forecasting and distribution planning process to address long-term electrification impacts across the footprint of the entire Company. As part of the modeling process, I also oversee the

non-wires alternative screening and planning process.

Q And are you familiar with the exhibits marked as "Exhibits 1" through "6", which provide the Company's 2020 LCIRP?

A (Walker) Yes, I am.

Q And what parts of the Company's LCIRP are you responsible for?

A (Walker) My primary responsibilities with respect to the Company's LCIRP are the NWA process, including the NWA Framework and Toolset, as well as the forecasting process.

Q Are you familiar with the exhibit marked as "Exhibit 7", which is the Company's rebuttal testimony that you co-sponsored with Mr. Johnson and Mr. Freeman, responding to direct testimony filed by DOE, OCA, and Clean Energy New Hampshire?

A (Walker) Yes, I am.

Q And are you familiar with the exhibit marked as "Exhibit 8", which is the Company's supplemental testimony and supporting attachments you co-sponsored with Mr. Johnson, Mr. Freeman, Mr. Cosgro, and Ms. Gionfriddo?

A (Walker) Yes, I am.
Q And are you familiar with Exhibits 9 through 15, which provide the Company's responses to data requests issued by the Department of Energy and Clean Energy New Hampshire, and include responses that you have sponsored?
A (Walker) Yes, I am.
Q Do you have any corrections or amendments to Exhibits 1 through 15?
A (Walker) I do not have any corrections, but I do have a quick update.

In Exhibit 8, at Bates 23, the Company stated that it would be deploying a program called "GridTwin" in New Hampshire in 2023. GridTwin allows property searches for solar developers, in combination with hosting capacity analysis and estimations of interconnection costs.

GridTwin went live in New Hampshire as of Monday last week. The Company is now in the process of performing outreach and education to ensure that developers are aware of the new tool and able to fully use and understand it.

Q Thank you. And with this update, are you

adopting those portions of Exhibits 1 through 15 that you have sponsored as part of your sworn testimony today?

A (Walker) Yes, I am.

Q Thank you. Mr. Cosgro, would you please state your full name, Company position, and responsibilities?

A (Cosgro) Yes. Good morning. My name is Matthew Cosgro. I'm the Lead Engineer for New Hampshire Distribution System Planning. I'm responsible for the long-term planning and analysis of the New Hampshire distribution system.

Q Are you familiar with the exhibits marked as "Exhibits 1" through "6", which provide the Company's 2020 LCIRP?

A (Cosgro) Yes, I am.

Q And what parts of the Company's LCIRP are you responsible for?

A (Cosgro) My primary responsibilities with respect to the Company's LCIRP is System Planning's design criteria, activities, and studies.

Q Are you familiar with the exhibit marked as "Exhibit 8", which is the Company's supplemental testimony and supporting attachments that you

co-sponsored with Mr. Johnson, Mr. Freeman, Mr. Walker, and Ms. Gionfriddo?

A (Cosgro) Yes, I am.

Q And are you also familiar with Exhibits 9 through 14, which provide the Company's responses to data requests issued by the Department of Energy and Clean Energy New Hampshire and include responses you have sponsored?

A (Cosgro) Yes, I am.

Q And do you have any corrections or amendments to Exhibits 1 through 6, 8, or 9 through 14?

A (Cosgro) No, I do not.

Q Are you adopting those portions of Exhibits 1 through 14 that you have sponsored as part of your sworn testimony today?

A (Cosgro) Yes, I am.

Q Thank you. I will now move directly to my right, with Ms. Ntakou. Would you please state your full name, Company position, and your responsibilities?

A (Ntakou) Good morning, everyone. My name is Elli Ntakou. I'm the Manager of System Resiliency and Reliability Planning. I'm responsible for optimizing the performance of the distribution

system assets in New Hampshire that are operated by the Company and to ensure the customer needs for service and reliability are satisfied.

As part my role, I'm also performing a climate change vulnerability study across the three Eversource Energy states, including New Hampshire.

Q Can you please provide a brief summary of your education and professional experience?

A (Ntakou) I graduated from Boston University College of Engineering with a Master's of Science and a Ph.D., both in Systems Engineering.

[Court reporter interruption.]

CONTINUED BY THE WITNESS:

A (Ntakou) Prior to joining the Company in 2022, I was employed by Quanta Technology in various positions, including the most Senior Advisor. I also worked for ESAI Power, LLC, leading their Northeast wholesale power market modeling efforts.

BY MS. RALSTON:

Q Are you familiar with the exhibit marked as "Exhibit 8", which is the Company's supplemental testimony and supporting attachments that were

co-sponsored by Mr. Johnson, Mr. Freeman, Mr. Walker, Mr. Cosgro, and Ms. Gionfriddo?

A (Ntakou) Yes, I am.

Q And, due to Ms. Gionfriddo's unavailability today, are you adopting those portions of Exhibit 8 that Ms. Gionfriddo sponsored?

A (Ntakou) Yes, I am.

Q Do you have any corrections or amendments to Exhibit 8?

A (Ntakou) No, I do not.

Q And are you adopting those portions of Exhibit 8 that Ms. Gionfriddo sponsored as part of your sworn testimony today?

A (Ntakou) Yes. I am.

Q Thank you. Mr. Moawad, would you please state your full name, Company position, and responsibilities?

A (Moawad) Good morning, everyone. My name is --

[Court reporter interruption.]

CONTINUED BY THE WITNESS:

A (Moawad) Good morning, everyone. My name is Mina Moawad. I'm a Lead Engineer of Distributed Energy Resources Planning. I'm responsible for leading the Engineering team that performs the

necessary distribution system planning activities for the interconnection of distributed energy resources to the Company's distribution system.

Q And could you please provide a brief summary of your education and professional experience?

A (Moawad) Yes. I have a Bachelor of Engineering degree from Dalhousie University in Electrical, Electronics, and Power Systems Engineering.

Prior to joining the Company in 2021, I worked for Nova Scotia Power for over eight years in various positions, including Senior Project Manager of Transmission Capital Projects and T&D System Planning Engineer.

Q Thank you. And are you familiar with the exhibits marked as "Exhibits 1" through "6", which provide the Company's 2020 LCIRP?

A (Moawad) Yes, I am.

Q And what parts of the Company's LCIRP do you support?

A (Moawad) My primary responsibilities with respect to the Company's LCIRP are distributed energy resource planning, including system impact studies and interconnection standards.

Q And are you also familiar with Exhibit 15, which

provides the Company's responses to data requests issued by Clean Energy New Hampshire, and include responses that you have sponsored?

A (Moawad) Yes, I am.

Q Do you have any corrections or amendments to Exhibit 15?

A (Moawad) No, I don't.

Q And are you adopting those portions of Exhibit 15 that you have sponsored as part of your sworn testimony today?

A (Moawad) Yes, I am.

Q Thank you. And last, but not least, Mr. DiLuca, would you please state your full name, Company position, and responsibilities?

A (DiLuca) Good morning, everyone. My name is James DiLuca, Junior. I'm Manager of New Hampshire Distribution System Planning and Distributed Energy Resources Planning for the New Hampshire service territory. I'm responsible for assessing the long-term reliability of the distribution system and establishing any alternatives that are needed to address those needs, and also responsible for the DER planning based on interconnection requirements and

standards.

Q Can you please provide a brief summary of your education and professional experience?

A (DiLuca) I have a Bachelor's degree in Electrical and Electronics Engineering from the University of Massachusetts-Lowell. I also have a Master's degree in Power System Analysis from the University of Idaho.

And I have worked for Eversource for over 27 years. I started out as an Electrical Engineer at the Millstone Nuclear Power Plant down in Connecticut, worked at the Design Engineering group there, and also in the Condition-based Maintenance Department. And then, from there, I moved to a position within Transmission System Planning at Eversource, and was there for the last 22 years. And then, recently, I assumed the current position as Manager of the Distribution System Planning and DER Planning for New Hampshire.

Q And are you familiar with the exhibits marked as "Exhibit 1" through "6", which provide the Company's 2020 LCIRP?

A (DiLuca) Yes, I am.

Q And what parts of the Company's LCIRP do you support?
A (DiLuca) Primarily, responsibility is with respect to the distribution system planning, long-term, and also the DER planning and interconnections.
Q And are you familiar with Exhibits 9 through 15, which provide the Company's responses to data requests issued by the Department of Energy and Clean Energy New Hampshire, and include responses that you and/or Richard Labrecque have sponsored?
A (DiLuca) Yes, I am.
Q And Mr. Labrecque has resigned from Eversource Energy, is that correct?
A (DiLuca) That is correct.
Q And have you assumed Mr. Labrecque's responsibilities?
A (DiLuca) Yes, I have.
Q And, so, as a result, are you adopting Mr. Labrecque's responses to data requests this morning?
A (DiLuca) Yes, I am.
Q Do you have any corrections or amendments to Exhibits 1 through 15?

A (DiLuca) I do not.
Q And are you adopting those portions of Exhibits 1 through 15 that you or Mr. Labrecque have sponsored as part of your sworn testimony today?
A (DiLuca) Yes, I am.
MS. RALSTON: Thank you. I just have a few more questions for Mr. Lavelle *[sic]* and Mr. Walker.
BY MS. RALSTON:
Q So, I will start with a few questions, Mr. Lavelle -- Mr. Freeman, apologies, regarding the Company's 2020 LCIRP and the October 2022 supplement. Mr. Freeman, is it your understanding that RSA 378:38 requires that the Company's LCIRP include a number of components, to the extent that they are applicable to the Company?
A (Freeman) Yes, it is.
Q And Exhibits 1 through 6 provide the Company's 2020 LCIRP. Can you point the Commission to where there's an explanation of how the Company addressed each of those components?
A (Freeman) Sure. If the Commission refers to Exhibit 1, at Bates 047, it will see that there

is an Appendix A of the 2020 LCIRP. This Appendix A provides a guide to how the Company addresses each of the components listed in RSA 378:38. Appendix A also includes an explanation of why the Company has not addressed certain components of the statute that were deemed as not applicable to Eversource at the time of filing.

Q Thank you. And is it your understanding that RSA 378:39 is the statutory provision relevant to how the Commission evaluates an LCIRP?

A (Freeman) Yes, it is.

Q Exhibit 16 is DOE's testimony filed in this proceeding. Do you recall that, in its testimony, DOE stated that the Company had not addressed RSA 378:39 as part of its 2020 LCIRP filing and recommended that the Company submit a supplement?

A (Freeman) Yes, I do.

Q And did the Company address this recommendation from DOE?

A (Freeman) Yes, the Company did. In Exhibit 7, which is the Company's rebuttal testimony, the Company explained that, while its planning and project-authorization process inherently involves

evaluation of a range of considerations, including the impacts described in RSA 378:39, the Company did not include an express discussion in the 2020 LCIRP to address RSA 378:39 in the same way that the Company included Appendix A previously referenced to address RSA 378:38.

The Company agreed that a supplement would provide -- would improve the review process for stakeholders and for the Commission. The Company subsequently filed the supplement on October 18th, 2022, to address RSA 378:39.

As explained in greater detail in Exhibit 7, there are two key drivers of the Company's discussion regarding the investment in the distribution system. These two are, one, to maintain and improve a reliability and the safety of the distribution system for the benefit of all customers; and, number two, accomplishing this goal at a reasonable cost. On a project-by-project basis, the Company considers a range of attributes other than the impact on reliability and cost. These include constructability and, of course, environmental considerations.

We consider public-health impacts to be intertwined with environmental impacts. Similarly, as discussed in the supplemental testimony in Exhibit 8, reliability and resiliency improvements have a direct nexus with economic impacts.

Q And did the Company address any other recommendations in its rebuttal testimony or the supplemental filing?

A (Freeman) Yes. Both the OCA and Clean Energy New Hampshire have made recommendations that relate to the ongoing transition of the electric grid to address increasing electrification and grid modernization, among other things. The Company has acknowledged that the transition of the electric glid is occurring, and the Company supports a working group to receive stakeholder input in advance of the next LCIRP, and to develop and submit an LCIRP subsequent to that input.

It is also important to keep in mind, and Attorney Jessica *[sic]* mentioned this earlier, that the attorney -- that the LCIRP represents a "snapshot in time". But the

Company's planning and project-evaluation processes are always evolving. Since the time of filing in 2020, the Company has made substantial improvements in its planning process, in its technology, and in the personnel deployed to implement these plans.

In Exhibit 8, starting at Bates 20, the Company has provided specific examples of how it has begun to address the transition of the electric grid in its planning process. And the impacts of these adjustments to its planning process will be captured in the next iteration of the Company's LCIRP.

Q So, is it the Company's position that the 2020 LCIRP, inclusive of the October 2022 supplement, meet the statutory requirements and should be approved?

A (Freeman) Yes, it is.

Q Thank you. And then, finally, if I could just turn your attention to the exhibit that has been marked as "Exhibit 21". This is a letter filed by the Department of Energy on January 19th, is that correct?

A (Freeman) That is correct.

Q And, in that letter, DOE had two recommendations regarding the Company's 2020 LCIRP. The two recommendations were, one, that the Company's 2020 LCIRP should be approved, subject to the DOE's pending investigation in Docket IP 22-001, to consider modifications to interconnection procedures; and, two, that the Company should investigate revisions to its NWA threshold criteria, is that correct?

A (Freeman) Yes, it is.

Q And, so, Mr. Freeman, have DOE and the -- has the Company changed its position related to the application of the N-1 Planning Standard to DER interconnection?

A (Freeman) No, the Company has not changed its position with regard to the application of the N-1 standard. The N-1 Standard is a planning standard that is industry-accepted. The Company has been designing its distribution infrastructure to accommodate the loss of a single element at the substation level, without impacting customers at the distribution level.

The Company has also been applying the N-1 standard to distribution, to DER customers,

for some time. And, in fact, records show that over a decade ago the Company first applied the N-1 Planning Standard to DER customers in New Hampshire. And, in other operating areas, we have been applying the N-1 standard even longer. In 2020, the Company formalized the application of the N-1 standard to DER customers in its planning guide. And this N-1 standard represents an evolution of our planning criteria, in the face of increasing DER penetration, particularly at key substations, we have continually evolved our planning criteria over time, incorporating new standards, incorporating new planning methodologies, as they are applicable to the impact of DER. This is just another step along an evolutionary path.

And, so, the Company -- to the best of the Company's knowledge, the Company's planning standards do not need to be approved by the DOE and the Commission. We are not attorneys, but that is to the best of our knowledge. And, since we have the obligation for safety and reliability, we also have the obligation to develop planning standards that are commensurate

with the provision of that safety and reliability.

And, so, therefore, that is our position, that that standard is applicable for the role that we play in New Hampshire.

Q Thank you. Does the Company, however, recognize that DOE's position regarding the application of the N-1 standard to DER interconnection is contingent upon that pending investigation that DOE has mentioned this morning?

A (Freeman) Yes. The Company has engaged with DOE, because it believes that a collaborative approach ahead of the next LCIRP will be beneficial to DOE, to the Company, and to the Commission. And, so, since the DOE has opened an investigation, docketed as "IP 22-001", to investigate whether modifications to the interconnection processes are warranted, the Company recognizes that the DOE's position regarding the N-1 Planning Standard, as it applies to DER interconnections, is contingent on the outcome of the DOE's pending investigation. And the Company accepts that, and we'll collaborate and is willing to work with the DOE and stakeholders.

Q Thank you. And, Mr. Walker, I just have a few questions regarding the NWA framework. What are the current thresholds that the Company applies to its NWA framework?

A (Walker) Currently, the Company applies three thresholds. If one of which fails the NWA framework or the NWA screening, it does not proceed. Those three thresholds are, number one, if the project is related to aging or failed equipment; number two, if the project has to be completed in less than three years; and, number three, if a project's costs are less than $3 million.

Q Thank you. And does the Company think that it would be appropriate to perform an investigation regarding those thresholds ahead of its next LCIRP filing?

A (Walker) Yes. The Company and the DOE have agreed to an Investigation Plan pursuant to which the Company would modify these thresholds and report the results over a two-year period. Specifically, the Company has agreed to perform an NWA analysis for projects which would cost not less than $1 million, so, moving that from 3

to 1, and for projects that are related for aging equipment, on a case-by-case basis, with the exception of projects where previous NWA analyses have shown that there's a negative outcome.

Q Has the Company also agreed to investigate the timing threshold?

A (Walker) No. The Company -- oh, wait. I'm sorry. My bad.

Yes. The Company has agreed to look at the timing threshold from 36 months, so, three years, to 24 months, being two years.

Q Thank you. And will the results of this proposed two-year investigation inform changes, essentially, to the NWA framework ahead of the next LCIRP?

A (Walker) Yes. The results of this two-year investigation will inform any changes to the NWA framework, if any changes are supported by the data from the investigation. These changes will be incorporated into the Company's next LCIRP.

DOE has agreed that it would not make any further recommendations for modifications to the NWA framework thresholds until after the Company provides a final progress report in 2027.

Q Thank you. And, so, in your respective opinions, should these proposed resolutions to the DOE recommendations be incorporated into the Commission's approval of the 2020 LCIRP?

A (Walker) Yes.

A (Freeman) Yes. And, as I stated a few minutes ago, the Company's 2020 LCIRP, inclusive of the October 2020 supplement -- October 2022, sorry, supplemental filing, meets all the statutory requirements. The Settlement Agreement, specifically the NWA Investigation Plan, represents a thoughtful and collaborative way for the DOE and the Company to work together ahead of the Company's next LCIRP filing.

Thank you.

MS. RALSTON: Thank you. The witnesses are now available for cross-examination. And I appreciate everyone's patience as we sort of fumbled through the end there to address DOE's recommendations without the certainty regarding the Settlement Agreement.

Thank you.

CHAIRMAN GOLDNER: Thank you, Attorney Ralston. We'll begin with the Department of

Energy.

MS. SCHWARZER: Mr. Chairman, because the Department was not considering cross-examination, if you could proceed with a different party, and perhaps come back to me, I would appreciate it?

CHAIRMAN GOLDNER: Okay. I'll consider that. We'll move to Attorney Kreis.

MR. KREIS: Just give me a second here.

CHAIRMAN GOLDNER: Of course.

MR. KREIS: That differs from what you expressed an intention to do.

CHAIRMAN GOLDNER: Attorney Kreis, sorry, we were just playing Scrabble while you were -- while we were waiting. So, --

MR. KREIS: Well, if you came up with any good words, please let me know. I'm always interested in good words.

CMSR. SIMPSON: I don't know if I'd like to Scrabble against Attorney Kreis. He always comes up and teaches me a few new words.

MR. KREIS: Yes. We can talk about Scrabble some other time. But let's just say I'm not very good at it, even though people expect me

to be good at it, which is stress.

Okay. I'm going to start with Mr. Johnson.

CROSS-EXAMINATION

BY MR. KREIS:

Q Mr. Johnson, I noticed on the Witness List that you are the only witness today who is -- whose title includes the word "Director". And, so, therefore my question for you is, would it be fair to say that you are the highest ranking official from Eversource among the various witnesses on the Witness List who are taking the stand today?

A (Johnson) To correct you, Mr. Lavelle *[sic]*, to my left, is also a Director. So, we are the highest ranking Eversource employees here today.

Q Which of the witnesses report to you, if any?

A (Johnson) I'm sorry, that are here?

Q Yes.

A (Johnson) None of them.

Q So, and Mr. Lavelle -- excuse me. Everybody wants to call him "Mr. Lavelle", even though that's his first name.

A (Freeman) First name, yes.

Q I guess it's because we like him. Mr. Freeman doesn't report to you?
A (Johnson) He does not.
Q So, who is the official at Eversource who is responsible for approving the Least Cost Integrated Resource Plan in totality?
A (Johnson) Ultimately, it would be the --
[Court reporter interruption.]
BY THE WITNESS:
A (Johnson) Ultimately, it would be the president.
BY MR. KREIS:
Q And has the president approved the total LCIRP plan?
A (Johnson) The president at the time that it was filed has since left Eversource New Hampshire. We have a new president, Mr. Foley. So, directly, no, he has not. He has only been with the Company for a matter of months. So, the filing was done under a prior president.
Q So, I just want to make sure I understand your testimony correctly. What you just said is that the person at Eversource who is responsible for approving the Least Cost Integrated Resource Plan in its totality is the president of the Company.

That president is now Mr. Foley. But, in fact, he has not approved the LCIRP, even though it is his responsibility to do so. Did I understand your testimony correctly?

A (Johnson) I'm saying that the person that was responsible, at the time of the LCIRP filing, approved that, that LCIRP filing.

Q Okay. But what I'm trying to figure out is, who, at Eversource, has approved the entire Least Cost Integrated Resource Plan that is pending before the Commission today? And I realize it's a hard question, because the Plan has been sort of parceled out to the Commission and the other parties in a piecemeal fashion. And I realize that there are personnel changes all the time at utilities, including Eversource.

But I'm just trying to figure out, who is the person at Eversource who's responsible for making sure that this Plan is both integrated and least cost?

A (Johnson) I'm not sure how to address your question, other than the way that I have addressed it. At the time of the filing, and of the supplement, the president at that time

approved of those filings and the supplement.
Q Okay. I won't belabor that point any further. In Exhibit 7, which is your testimony from last September, again I'm addressing Mr. Johnson, you describe yourself, at Bates Page 003, as "responsible for optimizing the performance of the distribution system assets of Public Service Company of New Hampshire". And, on the same page, you say you're "also primarily responsible for the Company's capital budgeting and project approval process associated with distribution line projects and programs."

So, my question is, are you responsible for PSNH's overall capital budget?

A (Johnson) I assist in the development of the overall budget. I'm specifically responsible for developing the distribution line components of it. But I do coordinate the assembly of the entire distribution capital budget.

Q So, would it be fair to say that you don't have the authority to approve distribution system capital budgets or does somebody further up the chain of command have that responsibility? I'm just trying to figure out who is responsible for

what?
A (Johnson) Ultimately, the president is responsible for the approval of the capital budget plan.
Q Would you say that it's your responsibility to determine what every option the Company might deploy in a given planning period, capital projects, plus anything else? Is it your responsibility to determine which of those options to pursue?
A (Johnson) No. Not me, specifically, no.
Q Do you have any expertise in the field of utility finance or economic principles?
A (Johnson) I am certainly familiar. I would not claim myself to be an expert.
Q And given -- again, I'm just trying to understand where the state of play is here. And given that there have been various filings, and it's my understanding that they collectively comprise the LCIRP that is before the Commission for its approval, I'd just like to know, what is the planning period covered by the Integrated Resource Plan that the Company is presenting for approval here?

A (Johnson) Well, the planning period, I may be a little bit off on this, but I believe five years is the intended, and at least, especially with the follow-up that was provided to the original filing, there were requests for information extending out five years.

Q Mr. Freeman, is that also your understanding? Because your testimony was that, I think it was your testimony, that "the Company's planning processes are evolving all the time", as they should. So, I just want to make sure that the Commission understands what planning period you're actually covering by this Plan?

A (Freeman) So, first, I'd like to draw a distinction between Mr. Russel Johnson's role and mine.

Q Okay. But that wasn't my question.

A (Freeman) Well, I just --

Q Could you answer my question please?

A (Freeman) But that would help me answer your question.

Q Okay. Please just answer my question.

MR. KREIS: Mr. Chairman, would you instruct the witness to answer the question that

I asked?

CHAIRMAN GOLDNER: Can you repeat your question, Attorney Kreis?

MR. KREIS: I just asked Mr. Freeman if he shares Mr. Johnson's understanding of the planning period covered by the Least Cost Integrated Resource Plan? Which requires, I think, an answer like "five years" or "through December of 2030", or something like that.

I didn't ask him about his role with the Company, as it compares and contrasts to Mr. Johnson's role.

And, if the Company wants to ask further clarifying questions about that on redirect, that's another issue.

CHAIRMAN GOLDNER: Please proceed, Mr. Freeman.

BY THE WITNESS:

A (Freeman) In my role, --

CHAIRMAN GOLDNER: Mr. Freeman?

WITNESS FREEMAN: Yes.

CHAIRMAN GOLDNER: If you could, just is it a 10-year planning horizon, a 5-year horizon?

CONTINUED BY THE WITNESS:

A (Freeman) Yes, I was going to say, for substation planning, at the bulk substation level, we look at a 10-year planning horizon. At the distribution level, it's more near-term than ten years.

CHAIRMAN GOLDNER: Thank you.

BY MR. KREIS:

Q Okay. The last part of your answer, can you repeat it? I just didn't quite hear it.

A (Freeman) At the distribution level, where Mr. Johnson operates, it tends to be more near-term. They don't have a 10-year planning horizon. That was the distinction I was trying to draw.

Q So, in other words, it wouldn't really be possible for the Commission to make a determination here, as to the Least Cost Integrated Resource Plan, what planning period is actually covered by the Plan. Because, if I understood your last answer correctly, it depends, basically, on what specific assets or options or projects we're talking about?

A (Freeman) Is that a question for me?

Q Yes. I just want to make sure my understanding

is correct.

A (Freeman) I disagree. I disagree. That the Plan covers multiple applications: DER planning, distribution line planning, substation planning. They have different planning timeframes, and the Plan discusses and covers each one of those applications.

Q Okay. Mr. Freeman, you testified on direct about your understanding of the Company's obligations under the statute that covers Least Cost Integrated Resource Planning. So, I'm going to ask you a question about the statute. What does the word "integrated" in that statute mean to you?

A (Freeman) In that statute, and I can't speak for the authors of the statute, I can only speak for how I interpret it.

Q Indeed. That's my question.

A (Freeman) Okay. So, when I see the word "integrated" in that context, it implies planning with respect to the needs for distribution customers, the need for DER customers, and taking into account the transmission requirements to meet the distribution infrastructure expansion

needs.

Q Okay. Turning to either Exhibit 2 or Exhibit 1, I've been looking at Exhibit 2, I don't have any questions about confidential or punitively confidential material. So, I don't think it matters. And I think I'm sticking with Mr. Freeman here.

At Bates Page 021 of Exhibit 2, it says "After a trend forecast is produced for each substation, the forecast is adjusted for energy efficiency, DER, large customer projects, or other material changes in load or supply."

I have correctly quoted from Bates Page 021, I hope?

A (Freeman) I'm trying to find the spot. Yes.

Q Okay.

A (Freeman) I think I have it. Yes.

Q Okay. I want to understand what that means. Does that mean that the way in which energy efficiency is accounted for in the Least Cost Plan is as an upfront adjustment to the forecast demand at each substation?

A (Freeman) If you don't mind, Attorney Kreis, I will defer to my colleague, Mr. Walker, who

reports to me, and this is his purview.
Q Okay. I'd be happy to hear what Mr. Walker has to say in response.
A (Walker) Sure. To quickly recap the question, you're asking whether the energy efficiency is being up-front integrated into the forecast by station?
Q I'm just trying to make sure I understand and the Commission understands the role that energy efficiency actually plays in the Company's integrated resource planning. And I think what I got from Exhibit 2 is that you account for energy efficiency as sort of an upfront adjustment to your anticipated load?
A (Walker) Yes. So, to answer that question, in terms of how the Company accounts for energy efficiency in its LCIRP, there's two points where those get accounted for. Number one, as Attorney Kreis pointed out, that is correct, for our substation forecasts, we have energy efficiency projections, according to the current energy efficiency plans, that get calculated into the normal load projections of the station. Same as we do with solar and other additional adders.

In addition to that, energy efficiency, above and beyond those programs that are accounted for in the forecast, will be accounted for, for example, in an NWA analysis, which looks at additional programs that can be put in place above and beyond what's known and existing.

Q And would it be fair to say that that second flavor of energy efficiency you just mentioned --

A (Walker) Uh-huh.

Q -- is what I would call "geo-targeted energy efficiency"? You're looking at the effect energy efficiency could have on a particular substation or circuit project, as opposed to a so-called "wires alternative"?

A (Walker) Yes. One could phrase it that way.

Q Okay. And I think I'm going to stick with you, Mr. Walker, --

A (Walker) Okay.

Q -- since you seem to be the person who knows about energy efficiency. Again, on Bates Page 021 of Exhibit 2, or 1, it says that the "Company-sponsored energy efficiency...is proportionately applied to each substation in proportion to historical peak demand at each

substation."

My first question is, why is historical peak demand the right way to determine the amount of energy efficiency to be forecast for each substation?

A (Walker) Well, the underlying assumption is that, with energy efficiency, we are targeting a peak reduction. And the more peak that is available to look at, be it through lighting, HVAC systems, or other load components, the more impact the energy efficiency programs will have.

As an example, a station with a very minimal residential load, compared to one with a large residential load, the absolute magnitude in megawatts is likely to be higher on the large residential load, compared to the smaller residential load.

Q With regard to the reference at Bates 021 to "Company-sponsored energy efficiency", does the phrase "Company-sponsored" really mean "ratepayer-funded energy efficiency"?

A (Walker) In my understanding, that would cover the energy efficiency programs as through what's available in New Hampshire. And don't quote me

on the specific name of the program.
Q So, you don't know the name of the specific program through which Eversource offers energy efficiency to its customers in New Hampshire?
A (Walker) No, I do not, at this point.
Q But, to your knowledge, does Eversource invest any of its own capital in energy efficiency in New Hampshire?
A (Walker) I would have to defer that question and take that possibly as a record request, since I am not the Manager for Energy Efficiency in the State of New Hampshire.
Q I don't think that's necessary, because I think the Commission is well aware that the answer to that question is "no".

Does the Company contemplate doing any investment in actual Company resources, meaning capital in energy efficiency in the future, Mr. Walker?
A (Walker) I cannot directly speak to what the Company's strategic plans are to investigate -- invest into Company-owned energy efficiency. But, as part of the NWA evaluation, the Company does look at energy efficiency, in terms of it

being the cheaper long-term option, compared to traditional system investments.

It has not been clearly defined, you know, "geo-targeted", as you called it, an energy efficiency program would meet such criteria, where the funds for those programs would come from. Whether those would be from -- redirected from existing programs or whether those would come from other sources, those are not defined.

Q I think I might flip back to Mr. Freeman and see how I do.

Could you describe the actual process that Eversource uses to determine how to make capital investments in New Hampshire?

A (Freeman) Sure, Attorney Kreis. So, the process typically begins with the load forecast, which Mr. Walker -- Dr. Walker has just been describing. The load forecast allows us to understand, over the 10-year planning horizon, how the load is growing with respect to the drivers, and, more importantly, allows us to understand how each substation would be impacted by this load growth.

With this forecast, and with detailed

models of our system, we can do an analysis to assess whether there are any violations of the substation thermal capacity, violations with respect to voltage, violations with respect to power quality. And these violations are looked at holistically.

And we used the term "integrated" before. So, we have to look now at what are the solutions that will address these violations in a holistic manner. Is there DER at these stations? Whatever solution we develop should also address DER impact. Is it possible to bring some transmission -- transmission in? That portends different types of solutions. And, so, we develop a range of alternatives that would resolve the violation due to the load growth.

Along with the range of traditional alternatives, we would also develop a non-wires alternative, if it meets the suitability criteria established for NWA.

Once we have developed these alternatives, they then go through a process in Eversource called the "Capital Project Approval Process", where the project initiator, typically

of Distribution System Planning, would take these projects to a committee called a "Solution Design Committee". And the Solution Design Committee is comprised of subject matter experts from across the Company from every engineering discipline. And we would present what we think is the preferred alternative, along with all the other alternatives that would resolve that violation. And the Committee opines and gives guidance, and out of that process a decision is made on the project or the best alternative to move forward with.

Within that process, the various assets and the impact of the project are considered. The cost of the project, the environmental impact of the solution, the constructability of the various solutions, impact on losses, certainly, the impact on reliability. The area-wide needs, and the ability of the project to not just address that substation, but address other substation needs in the wider area. And then, the ability of that solution to stand the test of time, which means, as we go on, are there needs that are going to develop later on that this

project could address.

And, so, with this project, with the alternatives, and with the various attributes of the alternatives being adjudicated, for lack of a better word, by the Solution Design Committee, the preferred alternative would be identified.

And then, the project management team, the various engineering teams, the cost estimation team, will have an opportunity to do engineering analysis to flesh out the alternative, and then to take that alternative, along with the cost estimate, to the Eversource Project Approval Committee, called "EPAC". And this EPAC Committee is the one that decides whether that project should be funded. And, once that project is funded, whether partially or fully, it then gets into the capital plan.

The process I've just described is for substation-related projects. There is a different process for distribution line projects, which Mr. Johnson can describe. But it goes through different committees, state committees, rather than the Eversource Project Approval Committee.

Q Thank you. That's very helpful. So, and it's fair to assume that all of what you just described is also described in the various components of the LCIRP that's before the Commission today, correct?

A (Freeman) Yes. Yes. In fact, the Project Approval Process is attached, which delineates completely the process, and describes what each committee does and the responsibility of project initiators and all of the engineering disciplines.

Q So, it's ultimately, at least as to substation projects, the EPAC Committee that actually has the authority to make go/no go decisions about distribution substation projects?

A (Freeman) I will say it's both committees. The Solution Design Committee is more of a technical tollgate, and the EPAC Committee is more of a financial tollgate.

Q And then, you just mentioned that there's a whole different process involving a different committee that has to do with distribution line projects?

A (Freeman) Yes, sir.

Q What about other projects or options or programs

that Eversource might undertake in New Hampshire? And just so it's clear, when I use the term "Eversource", I'm really using that as a proxy or the equivalent of "Public Service Company of New Hampshire", which is the official name of Eversource's operating company here in New Hampshire.

A (Freeman) So, I'll speak to one, and I'll let Mr. Johnson speak to --

Q Well, I'm not asking Mr. Johnson. I'm asking you.

A (Freeman) Yes. Okay. So, system planning, my purview, we initiate projects that are in the realm of reliability and capacity needs. Projects that are asset health-driven, you know, transformer is aging, it's gassing, obviously, it's a safety and reliability risk, those would be initiated by the asset management team. They would go through the same process, but a different initiator.

Transmission line projects would be initiated by a different group. Go through the same process, but, again, a different initiator. And the same thing for distribution line

projects.

In addition to this, there are programs that have been established to address Company needs that have been identified previously. For example, --

[Court reporter interruption.]

CONTINUED BY THE WITNESS:

A (Freeman) -- oil circuit breakers, yes, which the Company is trying to get rid of, because these are -- it's an environmental issue, and they have performance issues, they're oil circuit breakers. So, there are programs to address oil circuit breakers, we have programs to address things like -- well, Mr. Johnson can speak to a lot more of these programs, because they're more on the distribution side. But, suffice it to say, these programs, which I establish and funded, they don't necessarily have to go through the same capital project approval process as a new project that's initiated by System Planning.

BY MR. KREIS:

Q Let's say that I work at Eversource, and I thought it was a great idea to replace every single meter that the Company has currently

deployed with advanced meters, because I thought that would save customers a lot of money. How would that either be approved or not approved?

A (Freeman) So, to replace every single meter across the Company would be an extensive program, that, if that is an idea that an engineer has, would have to be presented as a program idea to the capital project approval process. It would go through the same rigors as a project, but it would be presented as a program.

And, once it goes through a Solution Design Committee and the Eversource Project Approval Committee, it could be established as a program, with funding attached to it, that the engineer can now address these needs under that program.

Q Do you know which Committee would review a proposal like that?

A (Freeman) Both committees. The Solution Design Committee, if it's at the substation level, the Solution Design Committee, and the Eversource Project Approval Committee, if it's at the distribution line level, it would be the New Hampshire PAC, New Hampshire Project Approval

Committee, which is a state PAC, and then would also go to EPAC for funding.

Q What if I had an idea to adopt a new rate design that would have the effect of saving both the Company and customers a lot of money, say, I don't know, a time-of-use rate proposal or something like that?

That's not a capital project. So, what I'm trying to figure out is how an initiative like that would be considered, and either approved or rejected by PSNH or Eversource?

A (Freeman) It's a good question. Unfortunately, I don't have the expertise to be able to speak to how those particular initiatives are developed within the Company.

I could take a record request, if you desire?

Q Mr. Johnson, do you know the answer to that question?

A (Johnson) Not specifically. I believe that such an effort would have to be done in a regulatory-type proceeding and environment.

Q So, in other words, I just want to make sure I'm understanding this correctly, there really is no

role, at least you haven't described a role, and Mr. Freeman hasn't described a role, where a non-capital option like that could be brought to bear on the Company's planning process?

A (Freeman) Yes. And that is because we are here in our capacity as planners. And, as planners, we deal with capital projects.

Q "We're here as planners", you mean "you're testifying here today as planners"?

A (Freeman) Our role within the Company.

Q Okay. I think I'm going to stick with Mr. Freeman, because he is being super helpful. And, again, I'm still looking at Exhibits either 1 or 2.

At Bates Page 038, it says "customers are becoming increasingly reliant on uninterrupted electric service." My question is, how do you know that? "You", meaning "Eversource".

A (Freeman) And give me one second, Attorney Kreis, to get to that page, so I can see the full context of the statement.

Q Sure.

MS. RALSTON: Attorney Kreis, would you

mind just repeating the page number? I missed it.

MR. KREIS: I think it's 38.

MS. RALSTON: Of what? Of Exhibit 2 still?

MR. KREIS: Exhibit 2, yes.

MS. RALSTON: Thank you.

BY THE WITNESS:

A (Freeman) Can you point me to the paragraph, Attorney Kreis?

BY MR. KREIS:

Q Let me take a look. I don't have Exhibit 2 open, actually. I'm looking at my list of questions. And it is possible --

A (Freeman) Okay. I see it.

Q Okay.

A (Freeman) Second paragraph.

"The distribution system is inherently vulnerable to adverse weather conditions" --

[Court reporter interruption.]

WITNESS FREEMAN: Oh, sorry. I'm just reading it.

MR. PATNAUDE: Yes, aloud you're reading it.

WITNESS FREEMAN: I shouldn't do that.

MR. KREIS: Right. I don't want to drive the court reporter crazy.

BY MR. KREIS:

Q I was just quoting a line from that page that says "customers are becoming increasingly reliant on uninterrupted electric service." And my question was "How does Eversource know that?"

A (Freeman) So, Eversource is aware of this through a number of mechanisms. Number one, we hear from customers all the time. Whenever there's an interruption, whenever there's a reliability **[?]** event, we hear from customers that they are inconvenienced, that they're impacted. And we proactively reach out to customers to understand what their needs are and how they are impacted by events.

We have performed surveys of customers. In a recent survey, we tried to understand how much a customer would pay for additional reliability, how reliability impacts that customer's cost.

And it is from these touch points, as well as general industry knowledge and research

that we have sponsored through universities, such as UCONN, in Connecticut, that understand and are confident in saying that customers are increasingly vulnerable to uninterrupted electrical service.

Now, I would defer to any of my colleagues who -- either Ms. Ntakou or Mr. Walker --

Q Except I haven't asked any questions of them. If Eversource's attorney would like to ask them similar questions on redirect, then that's another issue.

A (Freeman) Fair enough.

Q But you've made a couple of interesting observations. One, you referred to some research that Eversource has been doing with the University of Connecticut, you said "UCONN". That doesn't cover New Hampshire, though. That was research conducted, I think, of Connecticut customers, yes?

A (Freeman) That is true. But customers are customers.

Q Indeed. That was going to be my next question, of, from your perspective, it's fair to assume

that the reliability expectations of customers in Connecticut is identical to the reliability expectations of customers in New Hampshire, even though New Hampshire is to the north of Connecticut and more rural than Connecticut?

A (Freeman) Yes.

Q Okay. And you said that there had been surveys to "determine how much a customer would be willing to pay for additional reliability." Has that information been brought to bear in or reflected in the Least Cost Integrated Resource Plan?

A (Freeman) That survey -- one of the surveys is included in Exhibit 5, Attorney Kreis.

Q Does it play a role, though, in Company decisions whether or not to invest further in reliability for purposes of "the Plan"?

A (Freeman) That's a good question. Let me think about it for a second.

So, if I were to paraphrase your question, you're asking whether customers desire a willingness to pay for reliability impacts our planning for reliability?

Q Yes. Well, let me ask you this question. Would

it be theoretically possible to design and build a system that maybe isn't 100 percent reliable, but could get pretty close to 100 percent reliability? Could you do that?

A (Freeman) If you consider "reliability" as a probability distribution, then you could say the average reliability, you could design a system so that, over an extended period of time, over a number of years of observation, the average reliability would be extremely high, yes.

Q Okay. So, what I'm trying to get to or figure out is, for purposes of Least Cost Integrated Resource Planning, how does Eversource know how close to get to that point? Because you could, as you just acknowledged, invest in your system to get pretty close to that point. Maybe not perfect reliability, but about as perfect as is technologically feasible?

A (Freeman) So, that question has been the subject of academic research over the years. And we know that, as you invest in the system, reliability tends to increase. And, so, there's a relationship between cost and reliability, from the utility's perspective, that, if you were to

plot reliability on the X axis, and cost on the Y axis, then, as cost increases, reliability increases.

From the customer's point of view, reliability and cost have also a positive relationship. The higher the reliability, the lower the cost for customers. Because every interruption means something different to a different type of customer. For residential customers, it's inconvenience of not having power. The longer the outage lasts, food might spoil in the refrigerator. For a commercial/industrial customer, the cost is higher.

And, so, different researchers and different utilities in other jurisdictions have been trying to find that sweet spot, between investing sufficient money so that you're not incurring a significantly high cost on the utility side, but driving reliability up to the point where you're minimizing the costs for customers.

But what is missing in this construct is the risk factor, right? Reliability and the

probability of outages is a stochastic event, right? There is a probability that something will happen. You can spend a significant amount of money reinforcing your system. And then, every -- in any given year, you can just have a bad year where everything that comes along goes wrong. Birds fly into your substations, squirrels get into your transformers, storms occur, which are not large enough to be excluded, but large enough to impact the reliability significantly. And all the money that you spend still doesn't give you a high **[***sic***]** SAIDI/SAIFI. But, over a long period of time, you will see the evidence of that.

And, so, to say that you can design a system that deterministically gives you a reliability outcome is not correct. Systems are aging, things are changing. And what we, as a company, try to do is to keep on investing in the system. Because, if we are not, if we are standing still, we are moving backward, right? So, we have to keep on investing in the system to get us to a point where we can mitigate some of those tail events. Either, you know, those days

that are really, really bad, where you have a lot of outcomes that, you know, that create high SAIDIs and SAIFIs. And this is all an attempt to mitigate and reduce the risk to customers.

Q So, that is super interesting. Could you very briefly, hopefully, just comment on the extent to which all of those insights, which were considerable, are reflected in the Least Cost Integrated Resource Plan that is before the Commission today?

A (Freeman) So, in the Plan, we have discussed the reliability performance that is a key indicator. We have -- and remember, this Plan was filed in 2020.

Q I'm well aware of that.

A (Freeman) Yes. And one of the things that I -- we said both, our attorney and I, that it was a "snapshot in time". And, since that time, we have made significant improvements in our processes. In fact, since that time, we have on-boarded a Manager of Reliability and Resiliency Planning and System Planning, Dr. Ntakou, who did not -- that position and this person did not exist at the time of the filing of

the Plan.

And, so, the ability -- and we have, in New Hampshire, adopted Synergy as a planning tool, which we did not have in 2020. And I say that, because the combination of those gives us the ability to do the predictive modeling based on the stochastic nature of reliability that we can do now that we could not do back then. Back then, we were looking at reliability based on the history. And, so, you're looking back at the history of failures, you understand the piece of equipment that failed. And you can calculate your SAIDI and SAIFI based on the failures that you have seen in the past. But that gives you a limited ability to predict that, if I did this, or I did this, or I do this, how would it change my reliability? We did not have the ability to do scenario-based planning. Now, we have the tools and we can do that.

So, the LCIRP of 2020 is not completely reflective of everything I described, because we didn't have the tools and the processes and the personnel at that time to do that. The next LCIRP would.

Q Thank you. Again, super interesting.

CHAIRMAN GOLDNER: Sorry, Attorney Kreis. Just a planning comment, I don't want to slow your momentum. I'm thinking maybe take a break in 20 minutes, something like that, for lunch. And not cutting off your line of questioning, but rather just extending it past lunch.

Would that work for you or do you prefer a different sequence?

MR. KREIS: No. Your wish is my command.

CHAIRMAN GOLDNER: All right. Very good.

So, let's go till 12:10, and then we can come back with further questioning from the Consumer Advocate after lunch.

MR. KREIS: Okay. I'm not watching my wristwatch necessarily. So, please do interrupt me when you decide it's time for lunch.

Just kind of moving ahead a little faster now.

BY MR. KREIS:

Q Looking at Appendix A, which I think Mr. Freeman

testified about earlier, so I'm just going to ask him. I want to -- is it safe to assume that Eversource's position is that it simply is no longer required to conduct an assessment of supply options, because it has divested all or substantially all of its generation resources? I just want to make sure I'm understanding what Eversource's position is correctly.

A (Freeman) Yes. So, --

Q Well, this is a "yes" or "no" question.

A (Freeman) Yes.

Q Okay. On Bates Page 054, again, in Appendix A, there's a reference to "Northern Pass", another favorite subject. And, if I'm understanding what that reference means, it seems to say that "Now that Northern Pass is dead, the Company has no plans to develop facilities that will impact energy price and supply in New Hampshire." That's a correct statement as to what it says at Bates Page 054, yes?

A (Freeman) No. I think the implication was that was provided as an example that, if that project did come to fruition, it would have given us a mechanism to impact --

CMSR. SIMPSON: What exhibit are we on?
MR. KREIS: Two.
CMSR. SIMPSON: Bates 054?
MR. KREIS: I think so.
BY MR. KREIS:
Q And, again, I'm just trying to understand what the Company's position is. Because it seemed to be saying that "when we decide that we think it would be cool to build some asset", through a different affiliate, by the way, that's not regulated in New Hampshire, "if we decide to build a big transmission project that might have an impact on supply, then, yes, then all of a sudden that triggers the LCIRP obligation to consider that. But, if we decide not to do that, then we can decide that that part of the statute doesn't apply to us."
Is that a correct understanding of what Eversource's position is?
A (Freeman) Is that a "yes" or "no" question, or can I elaborate?
Q It is a "yes" or "no" question.
A (Freeman) No.
Q Okay. I noticed at Bates Page 071 that the

Distribution System Planning Guide is copyrighted. Why is it copyrighted?

That might be a question maybe for Mr. Johnson.

A *(Witness Johnson indicating in the negative).*

A (Freeman) No, because the Distribution Planning Guide is my document.

Q Okay. Then, you can answer it.

A (Freeman) I'm not sure why it's copyrighted, to be honest. I am not an attorney. That decision was made internally by attorneys. I'm responsible for the technical content.

Q Okay. Now, I'm going to switch over to Exhibit 7, hopefully, briefly. And that is the Johnson/Freeman/Walker testimony of September 30th of last year, just so everybody remembers that. And, in that document, the Company proposes an LCIRP Working Group, and it says that "that working group would inform its next LCIRP process." I'd like to know what the word "inform" means as used there?

A (Walker) Can you refer us to the page?

Q It is the bottom of Page 10 and the top of Page 11.

Okay, I think that's a question for Mr. Freeman.

A (Freeman) Yes, Attorney Kreis. I see the reference.

So, "inform", in that context, means that the collaboration with the DOE and stakeholders in that working group would help to determine the parameters, the guidelines, the format of the next LCIRP document, and what should be in the document. Which I think addresses some of the questions that you're asking about what's missing.

Q So, in other words, that working group would actually decide what is going to be in the next LCIRP?

A (Freeman) It would help to decide what will be in the next LCIRP.

Q And who will be part of that working group?

A (Freeman) So, well, certainly, the DOE, the Company, and Clean Energy New Hampshire, and I think any other -- the OCA, any other stakeholder that has a standing with respect to the LCIRP.

Q Okay. But, at Page 20 of Exhibit 7, it says that "the working group would commit to filing a

report setting forth recommendations for the Company's next LCIRP." So, if I'm understanding that correctly, the working group wouldn't actually decide what goes into the LCIRP, it would make recommendations to, I'm not sure to whom, either the Commission or to the Company. So, maybe you could clarify that?

A (Freeman) Yes. And I neglected to mention that the working group would also include other electric distribution companies in New Hampshire. Because it is meant to be something that encapsulates what we would all do. And, yes, we would make recommendations to the Commission with respect to the LCIRP.

Q And your vision is that this would apply to all of the utilities subject to Least Cost Integrated Resource Planning?

A (Freeman) Yes.

Q So, that's all of the electric and natural gas utilities in New Hampshire, I think there are five of them, at least investor-owned ones?

A (Freeman) Yes.

Q Okay. At Page 21, it refers to an intent to incorporate the guidance from Order Number

26,358. That is the big grid modernization order that the Commission issued in 2020, I believe it was. That order called for the hiring of an independent professional engineer to help stakeholders participate meaningfully in the IRP process. Is Eversource endorsing that proposal from Order 26,358?

A (Freeman) I cannot speak to whether Eversource is or is not endorsing that proposal, Attorney Kreis.

Q Mr. Johnson, do you happen to know the answer to that question?

A (Johnson) Just give me a minute, because I want to read it in context.

[Short pause.]

CONTINUED BY THE WITNESS:

A (Johnson) I'd request that we take that as a record request, or that we be allowed to discuss during recess before I provide a response to that.

BY MR. KREIS:

Q Fair enough. I guess my question, what I'd like to figure out is, what guidance does Eversource actually plan to incorporate from that order,

because that's an order of about 80 pages, and, as you pointed out, it's a guidance document, so, therefore, I think not necessarily binding, from the Commission's perspective. So, I'm not sure about what guidance is or is not covered by that, and I'd like to know.

So, if you want to talk about that during the break and come back with an answer, that would be just swell, from my perspective.

A (Freeman) Sure.

Q Okay. Okay, just turning briefly to Exhibit 8. I think I might be able to get through everything before the lunch break, assuming it ends at 12:10.

Exhibit 8, I think at Page 12, refers to the Company's goal of "carbon neutrality by 2030." Mr. Freeman, that is a companywide goal, correct? It applies to Eversource at the parent company level?

A (Freeman) Yes, it does.

Q So, it is not specific to PSNH?

A (Freeman) It is not. It is inclusive of PSNH.

Q So, would it theoretically be possible for the Company to meet its goal of carbon neutrality by

2030, while still leaving Public Service Company of New Hampshire out of compliance with that goal?

A (Freeman) I don't think that is possible, Attorney Kreis. Because Public Service New Hampshire is such a critical part of the Company's operations, that, if PSNH is not compliant, I don't see how we meet our goals.

Q It is true, though, that that the goal of "carbon neutrality by 2030" is a -- it's not a binding goal, it's basically a Company commitment that it has made to itself?

A (Freeman) It's binding for us.

Q Because it's been approved by your management?

A (Freeman) It's a corporate initiative at the very highest levels of the Company.

Q Understood. But not enforceable by the Commission or some other regulator?

A (Freeman) Not to my knowledge.

Q Does the Company expect to report to the PUC, here in New Hampshire, about the extent to which it has met that goal, and whether, specifically, PSNH has met that goal by 2030?

A (Freeman) I don't know if there are plans. I can

certainly take a record request and find out. But the Company does expect to report out on these goals in its annual report, and in other mechanisms, to report sustainability findings.

MR. KREIS: Okay, I think I'm almost done.

[Short pause.]

MR. KREIS: In fact, I think I am done. Those are all the questions that I have for this distinguished group of Eversource witnesses. And it's three minutes after 12:00, according to my watch.

CHAIRMAN GOLDNER: Well done. So, I think what we'll do is we'll take the break now. You actually are not done, Attorney Kreis, I don't often remind you of things, but I think there's a pending question that you'll take when we return from lunch.

MR. KREIS: Oh, yes. Thank you.

CHAIRMAN GOLDNER: And then, we'll move to Mr. Emerson, Attorney Emerson, after that.

So, understanding that we do have out-of-town guests, let's return one o'clock sharp, and resume with Attorney Kreis's final

question.

Thank you.

(Lunch recess taken at 12:04 p.m., and the hearing resumed at 1:02 p.m.)

CHAIRMAN GOLDNER: Okay. We'll start back up again here at one o'clock. And I think there was one final question from Attorney Kreis, and then we'll move to Attorney Emerson.

MR. KREIS: Good afternoon, Mr. Chairman. Do you need me to restate that question?

CHAIRMAN GOLDNER: That's always best, sir.

MR. KREIS: Okay. So, the Company, in one of its exhibits, basically said it "intended to abide by the guidance of the Company's grid modernization order." And, when I asked, I forget whether it was Mr. Freeman or Mr. Johnson, or maybe it was both of them, "Well, which parts of that order, if any, do you actually intend to adopt as guidance?" They said "We need to talk about that over lunch, and we'll get back to you."

And, so, they're here, presumably ready

to answer that question.

CHAIRMAN GOLDNER: Very good. Please proceed.

BY THE WITNESS:

A (Freeman) So, the Company is aware of the grid mod. guidance. And the Company expects to include facets of those guidance in the next LCIRP. For example, electrification forecasts is something that we would definitely include. There are other components which we would include, but I would ask that, if you would allow us to respond to a record request, we can have a fuller description of the grid modernization components that we would address in the next LCIRP.

MR. KREIS: Well, I guess I would say, in response to that, that, if you -- what you just said, Mr. Freeman, is "We would like there to be a record request, so that we could respond fully to the question of what aspects of that grid mod. order we intend to incorporate or adopt as guidance." That's fine.

But what you just said was somewhat broader than that. And I guess I don't want to

give the -- or, I wouldn't want to give the Company a free-wheeling opportunity to create yet another big document, with all kinds of pontifications in it about with grid modernization and the like.

CHAIRMAN GOLDNER: All right. So, we'll take that as a pass on the record request. And we'll move to Attorney Emerson, and please proceed, sir.

MR. EMERSON: Thank you, Commissioners. Is this loud enough?

[Court reporter indicating in the affirmative.]

MR. EMERSON: So, my questions today will be addressed at the panel. Whoever feels like they can respond to it most appropriately, that's fine. If you feel like multiple people need to, that's fine as well.

BY MR. EMERSON:

Q First question is really about the N-1 standard. Am I correct that that was initially a standard applied to the bulk transmission grid?

A (Freeman) And you're talking about specifically in Public Service New Hampshire?

Q I guess I'm thinking more specifically within New England, as a planning standard of ISO-New England, for the bulk transmission grid?

A (Freeman) Then, I would say "yes". The N-1 Planning Standard has been applied at the bulk distribution system level, probably prior to it being applied at the distribution bulk system level.

Q Okay. And I'm using the term "bulk transmission", really, it's a way of distinguishing between the bulk transmission system, which are high voltage, serves, you know, interstate, and then what's not in the bulk transmission system. I'm a lawyer, not an engineer. So, I'm sure I'm probably not using it appropriately.

A (Freeman) No, you --

Q But that's how I'm choosing to use the term in these questions. You, Mr. Freeman, earlier today you testified that the first time N-1 standard was applied in New Hampshire, not in a bulk system scenario, was ten years ago, for an interconnecting analysis for a generator? I'm repeating back what I thought I heard, without

the benefit of the transcript. So, I'm just going to -- you can elaborate on that, if I got any of that wrong. But is that correct?

A (Freeman) No, let me clarify. So, the first time that the N-1 Planning Standard was applied specifically to DER interconnections was about twelve years ago during that impact study.

Q Yes.

A (Freeman) The N-1 Planning Standard applied to distribution planning, specifically at the substation, for the distribution load, we've been doing that in New Hampshire for a long time.

Q What's "a long time"?

A (Freeman) I would defer to Mr. Russel *[sic]*, who has more historical information than I do.

A (Johnson) I've been with the Company for 36 years, and we were doing it when I got here 36 years ago. And, you know, specifically at the 34 and a half kV interconnected system, which was distribution.

Q And the distinguished -- what you've distinguished in those two answers was that it wasn't applied in an interconnection analysis at that point, it was applied in distribution system

planning?
A (Johnson) I don't think that's true. I can't -- I was not part of that Planning Department. But I can tell you that that's back in time when the large biomass plants were connecting. And, you know, I recall that type of criteria being applied. And, so, I -- I couldn't give a specific reference.
Q But, when you say a "biomass plant", it's quite possible that that was being evaluated under the ISO-New England interconnection standards, as opposed to local interconnection standards?
A (Johnson) That's true.
Q Okay. Thank you.
A (Johnson) That's true.
Q So, then, I think you also, Mr. Freeman, you also said that the N-1 standard, as applied to the distribution system planning and to interconnection reviews, was formalized in 2020 in the Distribution System Planning Guide?
A (Freeman) That is correct.
Q And just to reiterate, that was applying the N-1 standard to both distribution system planning and interconnection review?

A (Freeman) So, let me clarify that statement. In the Fall of 2020, the Distribution System Planning Guide was adopted as a consistent document for all of Eversource service territory. And, in that document, the N-1 Planning Standard was memorialized for distribution planning specifically. Even though we had been doing distribution planning with an N-1 standard for a long time, we ensured that it was documented in this document I mentioned.

The N-1 Planning Standard, as it applies to DER, wasn't necessarily called out in that document. But it is documented in a separate document, the "DER Planning Guide". And that document was not filed with the LCIRP. It was actually -- it's actually still in "final draft" mode. But it is meant to be consistent with the DER Planning Guide.

Q That's helpful. So, there's been two, two documents, two planning guides. One which has been finalized, which is the Distribution System Planning Guide. And then, there's a DER System -- or, DER Planning Guide, which is still in "draft" form, is that correct?

A (Freeman) That's correct. The DER Planning Guide is still in "draft" mode. But the standard, and the application of the standard to DER, was formalized in 2020.

Q And, so, would you say Fall of 2020 was when the standard -- when Eversource started to a plan -- Eversource started to apply this N-1 standard to interconnection studies?

A (Freeman) No.

Q Or was it before that?

A (Freeman) It was before that. And, in New Hampshire, as documented in one of these -- I forget which interrogatory, but we supplied a copy of the interconnection study that shows that twelve years ago we had applied an N-1 Planning Standard for a study in New Hampshire. And, so, even before the formalization of this planning standard, we had been doing it in New Hampshire.

Q From the responses, it sounds like this has been -- it's been a process over the past four or five years of starting to implement the N-1 standard when doing an interconnection review. And I make the exception that there, clearly, it was applied for larger generators in the past,

that likely were subject to the ISO-New England interconnection standards?

A (Freeman) It was applied for larger generators in the past that were distribution connected. I do take exception with the characterization that it's a "process". Since 2020, we have consistently applied the N-1 standard to DER interconnections.

Q Okay. Thank you. I use that term "process" more because I wanted to identify a time period really. So, we're talking about a four to five year time period, leading up till today, when you still have a draft planning guide for DER.

During that time period, did Eversource discuss this planning standard or the change in the planning standard with any regulator in New Hampshire?

A (Freeman) Not to my knowledge.

Q Did Eversource discuss, the same question, but with regard to what I'll call "stakeholders", did Eversource ever discuss this change in the planning standard with any stakeholders, and by that I mean maybe the Office of the Consumer Advocate, Clean Energy New Hampshire, developers

of generation in New Hampshire?

A (Freeman) Not to my knowledge. However, if you will allow me to elaborate a little bit? As I mentioned earlier in direct testimony, our planning standards have evolved over the years. We have evolved from doing a simple check on capacity, to looking at voltage, to looking at --

[Court reporter interruption.]

CONTINUED BY THE WITNESS:

A (Freeman) -- voltage flicker, power quality analysis. We've evolved to doing transient analysis with Clear Scan, when we are not doing N-1 planning.

At every step along the way you could ask the same question. Did we discuss that with the Commission? Did we discuss it with stakeholders?

We understand our obligation is to provide safe, reliable service. And, so, we also have the obligation to develop standards that dictate how that safe, reliable service actually occurs.

BY MR. EMERSON:

Q Okay. I guess I'm -- a little bit of leeway to

elaborate. But I didn't ask -- I just asked pretty simply "did you discuss these questions with either the regulator" -- or, "did you discuss the standard and its implementation with the regulators or any stakeholders in New Hampshire?" And I think the answer was "no", correct?

A (Freeman) Yes. We didn't discuss the standard, or any previous standard, that we've applied since the inception of DER interconnection studies.

Q So, I'll also call your attention to Exhibit 6. I'm not sure you actually need to look it up or look at it, but I'll give you an opportunity. So, this is the "Eversource New Hampshire Distribution System Assessment" that was conducted by TRC.

And in this -- do you have it, so that you're comfortable answering questions? It's actually just one quick question anyways.

So, the question is, in this document, does it discuss or analyze the costs or benefits to either Eversource ratepayers or to interconnecting customers of implementing the N-1

standard?
A (Freeman) Is that a "yes" or "no" question?
Q If you don't feel like you can answer it "yes" or "no". But the question is, does this discuss costs or benefits to ratepayers from implementing this standard or to interconnecting generators?
A (Freeman) Well, subject to check, and I haven't read the entire document, I don't believe the document discuss the costs and the benefits of any standard that we've applied, for either distribution system or DER planning.
Q And, just generally, has Eversource conducted a cost/benefit analysis of implementing this standard to either its own ratepayers or to interconnecting customers that you're aware of?
A (Freeman) I'm not aware that we have conducted a cost/benefit analysis of any standard that we've applied to distribution or DER customers.
Q Did Eversource seek approval from any New Hampshire regulator for implementing the N-1 standard, at either the distribution level or to interconnection review?
A (Freeman) We have not sought approval of any standard that we've applied --

Q And --
A (Freeman) -- to DER or distribution interconnections.
Q Yes, sorry for interrupting. Mr. Freeman, I believe you testified earlier that it was Eversource's position that it "did not need to apply for approval of any interconnection standard", is that correct?
A (Freeman) That's not correct. I said, to the best of my knowledge, I'm not an attorney, --
Q Yes.
A (Freeman) -- but I am not aware that a company needs to seek approval from the Commission for formalization of standards.
Q And what is that understanding based on?
A (Freeman) It's just based on my experience. And I haven't been with the Company very long, I'd say two and a half years. So, it's based on my limited experience and conversations with peers.
Q Thank you. And, when Eversource was implementing this new standard, the N-1 standard, to the interconnection procedures, did it discuss or analyze any cost allocation methods, other than the "cost-causer pays" principle? And I will

assume you know what the "cost-causer pays" principle is. But I'm happy to explain it, if necessary.

A (Freeman) Sure. So, the "cost-causation" principle essentially dictates that the project or the customer that triggers an upgrade would pay for the upgrade. That is the principle that we have studied DER interconnections under in New Hampshire. And, so, when we contemplated the N-1 standard, it was with that principle in mind.

In New Hampshire, we have not yet considered another mechanism for cost allocation of DER interconnection costs. But we are open to consideration of other mechanisms.

MR. EMERSON: That's all the questions I have. Thank you.

CHAIRMAN GOLDNER: Thank you. Attorney Schwarzer, you had asked to potentially ask questions after Attorney Emerson?

MS. SCHWARZER: Yes. Thank you, Mr. Chairman. I do have a few.

CHAIRMAN GOLDNER: Okay. Please proceed.

MS. SCHWARZER: These questions are

generally directed to the panel. And whichever of you feels best equipped to answer, please just go ahead and answer.

BY MS. SCHWARZER:

Q On direct testimony, I believe you stated and described a two-year investigation on NWA thresholds. So, these questions have to do with what you testified to earlier.

Will that NWA threshold include data reports in June? And do you know the dates of those reports?

A (Walker) Can you clarify the question? When you are a referring to "NWA thresholds", and how does that relate to the reports?

Q I just -- your attorney asked you questions on direct, where I believe Mr. Freeman and, Mr. Walker, you described a "two-year investigation for NWA thresholds".

A (Walker) Uh-huh.

Q And I just wanted to ask you a few details about that.

A (Walker) Uh-huh.

Q Did that investigation include collecting data during the two years?

A (Walker) Oh. Okay, yes. I'm sorry, I was a bit confused.

So, in terms of the investigation, how we determined the original "threes" criteria, that being the $3 million for three years, and the projects not related to asset condition and health problems for the assets.

So, the Company determined those projects based on information we have from conversations with other industry partners, other utilities. There has not been a study conducted that has an official report that could be pointed to.

Q No, I understand. And I'm sorry if my question isn't clear. Your attorney asked you some questions in which you described an investigation going forward --

A (Walker) Oh.

Q -- for a two-year period. And I believe you said that there were going to be data reports --

A (Walker) Yes.

Q -- coming out of that investigation. I just wondered when those data reports were going to be done?

A (Walker) My understanding is that those would then be done at the end of those two years. So, within the -- I'd have to do math when that is. So, the first year would be continuing with the current proposed thresholds. Then, year two and three would be the two years we would evaluate the alternative thresholds. So, three years down the road.

Q And, if you know, or if anyone else on the panel knows, are there specific dates when you'd have information about evaluating those first year current threshold, and then your new threshold?

A (Walker) At this point, I don't have a specific data for you. But, in order to really -- if you're -- if we're looking at evaluating the alternative thresholds, it would only ever make sense to do that at the end of the two-year period.

Q And, at the end of the two-year period, what would you do with that data?

A (Walker) Well, if we find, for example, and this is hypothetical, that, you know, the $1 million threshold is more appropriate than the $3 million threshold, we would update our screening criteria

in the NWA process going forward, to permanently reflect that.

Q And the same thing for the three-year threshold, as opposed to the two-year threshold?

A (Walker) That is correct.

Q And, since the Company is applying a current threshold now, so, from maybe April to next March would be the first year?

A (Walker) I'm not going to fix myself on dates when the first year would be. Using the current thresholds for the purpose of, since this is a new process and framework for the engineers to get familiar with the current existing limits, before we start changing those.

Q Okay. And then, after you have whatever the hybrid criteria is, would there be a third report at some point in time?

A (Walker) That is conceivably possible. I just don't know whether that's in the plans right now or not.

Q Okay. In terms of the data that you'd be gathering, can you tell me what data you would be including in the reports that you would do?

A (Walker) I can certainly list some of the items.

It would definitely include others, this is all-inclusive or not, there's definitely going to be a few things missing.

But what we would most likely focus on is to understand as, and this is my understanding of the concerns with the thresholds, is that they might exclude certain projects that have a high potential for having a non-wires solution from ever being screened. So, we would focus on the projects, for example, in the 1 to 3 million range, those would be the ones monitored. Identify how many of those projects occurred in that two-year timeframe, how many of those passed the NWA screening effort, and how much resources the Company invested into actually screening those, to get a sense of a benefit-cost ratio for that additional screening work. And to -- oh, sorry.

Q Go ahead.

A (Walker) And to, because the reason why the Company has those thresholds is to make sure that, even with the framework and the toolset, where the screening is very efficient and can be done in a relatively short amount of time, in

terms of system planning exercises. It does take time, it does take resources. And, if we spend those engineering time and resources on projects that from the get-go have a very low probability of succeeding, we don't feel that's a prudent way of using engineering resources.

That's why those thresholds exist. And that's what we'd be looking for in that report, to see if lowering, from three to two years, lowering from 3 to $1 million. How many more projects does that include? What is the incremental use of resources to screen them? And how many of those come to fruition? And what's the value to the ratepayer, compared to the cost to actually screen for those?

Q Would your data report include any changes to -- that the Company may have made in the NWA analysis process and procedure?

A (Walker) Yes. So, of course, if we update the tool, in the meantime, for other parameters, like there's a whole lot of sets of information that goes into the tool and different technologies that goes into the tool, we would, of course, make note of that.

Q And would your data report, you've already said, would include an analysis of the implementation costs?
A (Walker) "Implementation costs" being --
Q For the different standards.
A (Walker) So, let me try to, just so I understand this correctly, we would basically provide the costs to screen those additional items that would be in it. As well as, if one of them screens positive for a non-wires alternative and the solution is deployed, then, of course, the costs and the benefit-cost ratio of that solution would be included.
Q Thank you. Would the report also include the frequency with which the Company has employed the NWA analysis?
A (Walker) If by "frequency" you mean the total amount of how often we have used it, on how many projects it's been used, yes.
Q And you'd document the analysis results of the NWA screening you initiated by project?
A (Walker) Yes.
Q And, in terms of documentation, you both document your analysis and retain it, is that correct?

A (Walker) Yes.

MS. SCHWARZER: Thank you. I don't have any further questions.

CHAIRMAN GOLDNER: Okay. Thank you. We'll move to Commissioner questions, beginning with Commissioner Simpson.

CMSR. SIMPSON: Thank you, Mr. Chairman. Thank you all for being here today.

So, first, I just want to set the stage. I want to walk through the provisions of the statute, and give you some context for what we have to do, as Commissioners, in reviewing your LCIRP. I'm not asking any of the witnesses to opine on legal matters. And I welcome input from the Company's attorney, to weigh in at any point, if she or any of you feel that you need some guidance.

BY CMSR. SIMPSON:

Q So, I'd first point everyone to RSA 378:39, the Commission's evaluation of our plans. So, I'll take some excerpts. "The commission shall consider potential environmental, economic, and health-related impacts of each proposed option", with emphasis on the word "option". And, as we

evaluate plans, I believe it's critical to reflect on the fact that, in answering really any question, there are multiple avenues that you can take.

So, as we proceed here, I really hope that you can shed light on the options that have been evaluated by the Company. And, furthermore, where we've determined that these "options have equivalent financial, reliability, environmental, economic, and health-related impacts", the order directed to us for "energy policy priorities" by the Legislature "guides our evaluation: [In] energy efficiency and demand-side management resources; renewable energy sources; and any other energy RSA sources."

Turning to RSA 378:38, this is somewhat of a checklist that the Company's LCIRP has to meet. And I'd like to walk through each of these elements, and ask you, all of you, and I say that generally, any witnesses here from the Company to weigh in, because we need to see that each of these elements is in your Plan.

And the record is extensive, with an update that's been filed by the Company, and

thousands of pages in the record before us today. So, I'm hoping that we can focus on the necessary elements today, and that you can shed some light and help to organize what you have submitted for approval before us.

So, let's first start off with the first Roman Numeral, "A forecast of future demand for the utility's service [territory]." So, please point to the Company's "forecast of future demand for your service territory."

A (Freeman) Certainly, Commissioner. So, in Exhibit 1, Section 5 of Exhibit 1. And I don't have the Bates number, I apologize.

Q So, then, let me ask you, the first part of this exhibit, who prepared these initial 44 pages, give or take?

A (Walker) Are you referring to Exhibit 1?

Q Yes, sir.

A (Walker) Well, that is from 2020. So, it was before my time. And I'd have to defer then to Mr. Johnson.

A (Johnson) There were many people. That's why I'm -- so, if you give me a moment to look through the sections.

Q Because, when I opened this first exhibit, there's a lot of detail here, there's conclusions, there's an overview. It would be helpful if you could guide me through why this is the introduction to your LCIRP, and what the Company was intending to communicate by this initial section?

A (Johnson) I believe that the intent was to give some context, some background, to the Eversource New Hampshire system, to, again, provide, you know, address acronyms that are used throughout the document, really just to provide that context upon which the rest of the LCIRP details, you know, address. They discuss the service territory, they discuss the makeup of circuits and voltages, and, again, just to give that background and context for the service territory that we provide.

It also goes into the load forecast and provides detail on how that's developed. That would have been created through our Distribution Planning group.

And, again, it discusses -- I don't want to go -- I don't think you want me to go

through every single section of it. But, effectively, there are certain fundamental pieces that were requested as part of the LCIRP that this background, I think, was important to provide.

Q So, this, this isn't really a plan, or a plan or part of the Plan, it's more context?

A (Johnson) Absolutely.

Q Okay. And you contributed to this, Mr. Russel *[sic]*?

A (Johnson) I certainly had a piece of this, yes. I do recall that.

Q And did any of the other witnesses?

A (Freeman) Yes. I contributed to it.

A (Cosgro) Yes. I believe I contributed as well.

A (Freeman) Yes.

Q Okay. Please proceed. Looking at the "forecast of future demand", which I think you were saying was in one of the appendices?

A (Freeman) Yes. So, to address -- to address your first question about how did we -- how did we comply with that first criterion, which is the "Forecast", Section 5, which starts at Bates Page 014, describes our load forecasting process.

And Mr. Walker can describe that process. But it also includes a table of the forecast from 2020 through 2029.

Q Which table is that? Table 1?

A (Freeman) That would be Table 1, which is Bates Page 016. And it gives the 50/50 forecast and the 90/10 forecast, which is intended to be a more extreme forecast.

Q And can you explain what those two design load forecasts mean, and why they're presented here?

A (Freeman) Yes. Mr. Walker, please.

A (Walker) Yes. And I'd like you to -- I'd like to refer you to Bates 014 of the same document, that is Exhibit 1. The last paragraph has that description. And I'm going to quote here quickly: "The 50/50 forecast is based off a 10-year normal weather and has a 50 percent chance of being exceeded. The 90/10 forecast is the extreme weather scenario that has a 10 percent chance of being exceeded."

So, we will look at historic weather patterns, and determine what the 90th percentile of that is, and the 50th, which would be the average or normal condition.

Q And what would be "abnormal weather conditions" that would inform the 90/10 forecast?

A (Walker) Most of those is driven through what we call our "temperature humidity index", so the combination of high temperature and humidity, that drives the significant part of the load. So, at a 90/10, we are looking at hot and humid days.

Q Okay. So, continue for describing the "forecast of future demand". It sounds like this is -- you're setting the stage here.

A (Walker) Well, we can -- it depends on how much you would like me to talk about this. I can walk you through the entire process very briefly.

So, if we continue down to Bates 015, that describes how the Company goes about doing this. So, we do create an economic trend forecast that looks at localized GDP data that we collect from Moody's, to correlate load growth in the region with the economic development. That builds what we call the "trend forecast" over the next ten years.

In addition to that, the Company adds certain factors into it, which would include

solar, rooftop/ground-mounted solar. This would include energy efficiency, as we've discussed in the morning. This includes electric vehicles in the future. And, as we long-term start to transition to an electric heating, through heat pumps, it will also start including a heating component as we transition to a winter peak.

It also includes step loads. So, large load additions, any new development that's known about gets planted.

Q Okay. So, this is high level, I'm sure there's more in the record describing your overall system --

A (Walker) Sure.

Q -- forecasts?

A (Walker) Okay. So, yes. And, so, that is Chapter, as Mr. Freeman mentioned, that's Chapter 5.1 that describes the methodology. Mr. Freeman also talked about Figure 1 and Table 1, which shows our current -- the forecast from the filing date for the territory.

And then, if we head to Attachments I believe it is B and C of the same document, those then include, let me go there, the

station-by-station forecast data for the entire territory.

Q And I'll point you to the order issued, 26,362, in DE 19-139, Page 6. So, "The Settlement further describes several elements that Eversource will provide in its next LCIRP", which is this LCIRP that's before us today, and "that framework includes a ten-year, substation breaker-level loading criteria and forecast; a five-year forward-looking evaluation of planned system investments and alternatives that were considered, including any area planning studies and Solution Selection Forms developed for that period, and an assessment of the demand-side management programs and their potential to defer or avoid the need for capacity-related investments."

So, that's really what I'm looking to --

A (Walker) Uh-huh.

Q -- have you shed some light on is, is a real system level, down to your substations circuit-by-circuit, I'd like you to walk us through that please? Show us that, that

forecast?

A (Walker) So, then, I would defer you to the Attachment of B and C of the same document, which includes the forecasts for the ten years from filing date at each of these stations.

Oh, yes. And the Bates number for this starts at 052. My apologies. Again, Exhibit 1.

Q Okay. So, you have your system here broken down by year, and you've divided it into regions: "Northern", "Southern", "Western", "Central", and "Eastern", correct?

A (Walker) That is correct.

Q And then, you break down your Northern region, it looks like by substation, on the next Bates page, correct?

A (Walker) That is correct.

Q Okay. So, explain this to us please? What are the trends? What are you seeing? Put your engineering hats on.

A (Walker) So, okay. At a high level, the first thing that we will see, and just to validate that I'm not misgiving that information, that we see a continuous load growth on all stations, with a CAGR value, so, average annual value from 0.3

percent, all the way up to 0.6 by region. So, all stations show a continued load growth over the next ten years.

Q And that's represented in what you have of the "Compound Area Growth Rate" in bottom of each table?

A (Walker) Yes.

Q Correct?

A (Walker) Yes.

Q Okay. Continue.

A (Walker) I'm sorry. I'm not sure what else you would like me to detail on this?

Q I just want you to explain these tables. I'd like you to explain what the process was that you used in developing the forecast that we have to evaluate?

A (Walker) Okay.

Q We have some engineers up here, a non-engineer. We just need to evaluate the record in front of us for statutory compliance.

A (Walker) Okay. So, then, let's go through this in detail, and we can use the information we got from Chapter 5.1 and kind of detail this.

So, as mentioned, what the Company will

do, we'll look at the historic values. We will correlate that with the economic growth. And to give you an example, just to go into a bit more detail here, if, for example, we see 1 percent, and this is purely figuratively speaking, over the last ten years growth at the station, with a 2 percent economic development, GDP development in that region, the correlation indicates that you have a 2 percent -- a 1 percent growth, with a 2 percent economic growth.

Those historical values will also already capture a lot of, for example, rooftop solar implications that might drive down loads during peak hours or shift the loads towards the evening. They will also capture any indirect energy efficiency benefits that do not stem from our programs. People swapping out the light bulbs to LED on their own, people installing new HVAC systems on their own. All of that is already caught in that trend analysis of how the load growth, relative to economic development.

Then, using the economic forecasts we get, we use that correlation to project forward what the trend is.

In addition to that, we reduce that forecast by what we've discussed earlier this morning, our known energy efficiency incentives and programs. Those get allocated by station, depending on the peak load, again, as was discussed this morning. The assumption being, the higher the load, the more energy efficiency can be gathered there.

Q How granular is that process? Are you tracking on a customer-by-customer basis? Or, are you averaging your overall program across your load statewide?

A (Walker) So, for the forecast, it is -- it is not by a customer-by-customer basis, because we cannot foresee two or three years down which customer will pick up the energy efficiency program and participate in it. So, we have to make some assumptions. And those assumptions here is that we have our statewide targets, and those get broken down by station, relative to their peak load.

Q Okay. So, these -- I'm looking at Bates Pages 052 through --

A (Walker) I believe it is 063.

Q -- 063.
A (Walker) Yes.
Q This is your forecast of future demand for the utility's service area, correct?
A (Walker) That is correct.
Q Okay. So, now explain how this, from your perspectives, informs your planning over the long term? I mean, I would presume that you perform this type of analysis not purely for compliance with your regulatory requirements and the statutory requirements here, but, presumably, you've performed these types of analyses for decades prior to these types of statutes existing.

So, as planning engineers, explain why this is relevant? Why you've done it and why you've organized it in this manner?

A (Walker) Sure. And I'll start this off, and then I'll pass to my colleagues who --
Q That's great.
A (Walker) -- have the day-to-day system planning and operation.

So, as the Company looks out on the ten-year horizon, we do know what our station

capacities are, and we keep a very close eye on when we are coming close to exceeding or coming close to the station capacity. And, at which point, System Planning starts initiating a project.

And I think at this point, Mr. Lavelle *[sic]*, do you want to pick up?

A (Freeman) I'll start, and then I'll let Matt talk about some details.

So, what Mr. Walker just described is the starting gate for the assessment of grid needs, right? And, with this ten-year forecast, what Mr. Cosgro would do then is to take this and do a ten-year system impact study to understand how the forecast impacts the substation loading. And, by driving that down to the distribution feeders, we can also get an assessment of line needs. But our purview in distribution planning is mostly the substations.

This results in a study that was included in Exhibit 12, which is a "2020 Design Violation Summary Report". And I would ask Mr. Cosgro to kind of walk through that.

And I apologize up front, Commission,

because I realize that it is not a leading narrative. We are kind of jumping you around, but I hope you can stick with us.

So, the Exhibit 7 **[**Exhibit 12**?]** is the "2020 Design Violations Summary Report". And then, back in Exhibit 1, there is a grid needs assessment, which is the result of that study, and looking at our planning criteria, and understanding what needs to be done to upgrade various substations to meet the load that Mr. Gerhard -- Mr. -- Dr. Walker is forecasting, and also to meet the planning criteria in the Distribution System Planning Guide.

So, with that, Mr. Cosgro, if you would please elaborate on our planning process and the Design Violation Summary Report.

A (Cosgro) Yes. Thank you. So, yes. Using the forecast that we were just discussing in Exhibit 1, using that, combined with the design criteria that's also in Exhibit 1, Bates Page 064, the Distribution System Planning Guide, we do a ten-year analysis of the distribution system station-by-station, utilizing base case and contingency scenarios. And that results in

the report that you see in Exhibit 2 -- nope, sorry, Exhibit 3, Part 1, Bates Page 087.

Q Just a moment.

A (Cosgro) Yes.

[Short pause.]

CONTINUED BY THE WITNESS:

A (Cosgro) So, you should be seeing a "2020 to 2029 Load Flow Study", --

BY CMSR. SIMPSON:

Q Uh-huh.

A (Cosgro) -- dated "July 1st", and "Revised December 2nd, 2020".

Q And you do this every year, correct? You do a Load Flow Study every single year?

A (Cosgro) Yes.

Q So, this is "2020 to 2029". Presumably, you have the '23 through 2032 that you're working on or have just completed?

A (Cosgro) We will be starting a new analysis. We ended up taking a pause on our ten-year analysis, just because of the change in the load flow software we've been utilizing.

Q Okay.

A (Cosgro) So, while we learn and acquaint

ourselves with the new software, we took a year off. But we have been monitoring loads, to make sure we don't have any immediate concerns.

Q Okay. Thank you. Continue.

A (Cosgro) Yup. So, we produced this ten-year study that identifies system needs. We also have a alternative format of those distribution results. So, the original report is a year-by-year analysis. And it was found that it did help some readers that a location-by-location analysis was beneficial. So, that report is also included in Exhibit 3, Part 1, of Bates Page 196.

So, people that are more familiar with the geographic parts of the state can look at this report and see the needs on a location-by-location basis.

Q And are these breaker-by-breaker?

A (Cosgro) Substation-by-substation. But we do do an analysis of the different components of the planning criteria.

Q Okay.

A (Cosgro) So, base loading, you know, contingent loss of a transformer of a feeder breaker or of a bus section.

Q Okay.
A (Cosgro) So, we do this analysis to identify the needs. The report documents what those needs are. And then, we go into the next step, which is to do initial funding for a localized study on that particular location. So, we reconfirm the needs, and then start developing the solution alternatives.

So, I believe the initial funding requests, I believe there are examples of those also in Exhibit 3, might be Part 2.

A (Freeman) Sorry, just to interject a little bit, Commissioner, because I know one of the requirements you read was for us to look at the distribution breaker level.
Q Yes. That's from a prior order.
A (Freeman) Correct. And, so, in the table that Mr. Cosgro is referencing, you would see we list substation, and then we list circuit, and each circuit has a breaker. And, so, the circuit violations are meant to indicate -- align with the requirement that we look at each circuit at the sub -- each breaker at the substation.
Q Could you give us a Bates page, and show us an

example of that please?
A (Freeman) Yes. So, Bates Page, let's see, 097, these are the Northern Region Base Case Violations, you see it lists "Substation: White Lake", it lists "Circuit", there are line ratings, and there are "Circuit Violations". In this case, there are no circuit violations. But, if there were, they would be listed there.
A (Cosgro) So, an example would be, on Bates Page 098, there is a circuit violation noted.
Q So, is that breaker-level loading criteria?
A (Cosgro) For this example, it's highlighting a voltage concern on the distribution system, for the 32W4 feeder.
A (Freeman) But, yes, that is breaker-level. Because that circuit has a breaker at the substation.
Q Uh-huh. Probably more than one?
A (Cosgro) Correct.
A (Freeman) Yes. If there's one breaker feed circuit, yes.
Q So, is that breaker-level?
A (Freeman) Yes.
Q So, I'm looking at Bates Page 098, "Southern

Region - Base Case Violations". I see "Substation: South Milford". So, let's just take that substation, for example. You have a transformer there. It looks like one transformer. Do you have breaker-level loading criteria with a forecast for that in this record?

A (Cosgro) In the document that we're looking at right now, no.

Q Or any other exhibit?

A (Cosgro) Yes. So, the location-by-location report that I mentioned, --

Q Yes.

A (Cosgro) -- does go into the breaker-by-breaker analysis.

Q Do have a Bates page and an exhibit?

A (Cosgro) I'm scrolling through.

Q Take your time.

A (Cosgro) Yup.

Q And I'm not trying to provide trick questions. I'm just thinking about this as a rubric, and trying to check off every requirement. Understand what's in the record, and make sure that we meet our statutory obligations.

A (Freeman) Completely understand.

A (Cosgro) All right. I will have to retract that. It looks like this report only covers transformers. Commissioner?
Q Yes.
A (Cosgro) May I point out, so, I'm actually -- I switched over to Exhibit 4, the confidential version of Exhibit 3.
Q Okay. Just a moment.
A (Cosgro) So, --
Q Part 1 or Part 2?
A (Cosgro) Part 1.
Q Okay.
A (Cosgro) So, I am looking at the appendix of the original ten-year study report.
Q Bates --
A (Cosgro) Bates Page 195.
Q Okay.
A (Cosgro) And that does show that we have looked at each transformer bus and feeder or circuit. So, each feeder would be a breaker of the substation.
Q Okay.
A (Cosgro) So, while we might not necessarily note the particular loading of that station, the

report only calls out design violations. But this appendix shows that we have looked at those different scenarios or different pieces of equipment.

Q Okay. So, you're not aware of, in the record, substation breaker-level loading criteria having been provided?

A (Cosgro) If it was not a violation, it was not included in this report. If it was within our design criteria, it was not mentioned as being an issue.

A (Freeman) So, just to understand your question, Commissioner.

Q Uh-huh.

A (Freeman) So, the loading criteria is explained in the Distribution System Planning Guide, where each circuit should not be loaded more than 100 percent of its normal rating.

Q Okay.

A (Freeman) So, that's explained in the Distribution System Planning Guide. And then, that criterion is used to assess the circuit loading based on the forecast.

Q Uh-huh.

A (Freeman) And, if it is a violation, as Mr. -- as Mr. Cosgro said, if it's not a violation, it is not listed.

Q Okay. So, I would understand you to start with historical data, and then current state. So, looking at that Order 26,362, in the Settlement for your last LCIRP, to satisfy RSA 378:38, the Company agreed that, in your subsequent LCIRP, so, this one, there would be "a ten-year, substation breaker-level loading criteria and forecast."

So, that's all I'm trying to understand, so that we can better understand Part I of the statute, a future demand forecast of your service area. So, you have your ten-year outlook, at a substation breaker level, that's all I'm just trying to find. I'm just trying to find that in the record, hoping that someone can point me to that?

A (Freeman) If you give us a few minutes to confer, Commissioner?

CMSR. SIMPSON: Sure. Mr. Chairman, do you want to take just five? Or, do you want to -- do you think you can do it while we're --

WITNESS FREEMAN: I think we can do it now.

CMSR. SIMPSON: Okay. That's fine. I retract that request.

[Witnesses conferring.]

WITNESS FREEMAN: Okay. We have discussed.

CMSR. SIMPSON: Okay. Great.

BY THE WITNESS:

A (Freeman) So, the forecast that was provided is at the substation level.

BY CMSR. SIMPSON:

Q And be specific for us, the exhibit and the Bates page?

A (Freeman) So, the Exhibit 1, Bates -- Appendices B and C, which are Bates Pages 052 and to 063.

Q Okay. Just a moment. Okay. So, these tables are at the substation level?

A (Freeman) So, those tables are at the substation level.

Q Okay.

A (Freeman) And the process that we employ is that we take the substation level forecasts, and we allocate it down to the distribution feeders.

Q Uh-huh.
A (Freeman) And, so, that would be the breaker level forecast.
Q Yes.
A (Freeman) And then, we conduct a study to understand the loading at each transformer and at each circuit. We did not provide, in all transparency, that circuit level allocation.
Q For the substation breaker level?
A (Freeman) For the breaker level, correct. But, for the substation, we did not provide it for the breaker level. We did use it in the studies. And, whenever the studies showed a violation of the feeder loading, we noted that in Exhibit 4, Exhibit 3 is the redacted version, starting at Page Number, I think, --
A (Cosgro) So, that would be the Report starting on Page -- Bates 087, Exhibit 3.
A (Freeman) So, Bates 087 --
Q Which exhibit?
A (Freeman) Exhibit 3, starting on Bates Page 087, we have noted whenever a substation transformer is overloaded, based on that forecast, and whenever a distribution circuit is overloaded or

has a voltage violation issue again, based on the forecast, pushed down to the breaker level. So, those are the results.

Q So, this is your -- this is your planning study? That is your ten-year load flow?

A (Freeman) Yes. And the only thing that's missing is we did not provide the data that shows the breakdown to the breaker level, which we used in the studies. And we can supplement that. That was a miss, I guess.

Q Okay. So, we'll go to number (2). So, "a five-year forward-looking evaluation of planned system alternatives" -- "investments and alternatives that were considered, including any area planning studies and solution selections forms developed for that period."

Can you point me to that please?

A (Cosgro) Yes, I can. Just I need a minute to locate them in the filing, in the exhibits.

Q Take your time.

[Short pause.]

BY CMSR. SIMPSON:

Q And again, going back to Roman I of 378:38, we're still trying to break down the "forecast of

future demand for your service area." So, you have it at a substation level, but not at a breaker level, with loading criteria for this forecast at this time. But I'm just trying to understand how the forecast is developed. What that forecast was? How it's developed? Because that leads us to your plan, --

A (Freeman) Correct.

Q -- what your plans are.

A (Freeman) So, let me add. So, do you understand now how the forecast was developed? Because that's the discussion that Mr. Walker had with you, about how the forecast is developed for each bulk substation. And then, we take that forecast and we drive it down to the breaker level, which we did, but it's not included here. And then, we used that for the planning study to develop the violations.

Q At a general level, I do.

A (Freeman) Okay.

Q But I would like to understand, because I know there's a lot of capital investment that's contemplated in this Plan, distribution automation, protection. You have a lot in here

that presumably would inform those forecasts more granularly, from a temporal, a locational perspective in the future, which may be today, since this was two and a half years ago that this Plan was filed. You've probably deployed many of those investments at this time.

I want to understand the data sources that the Company utilizes in developing that forecast, even below the breaker level. You don't have to provide -- you didn't have to provide them per your last settlement agreement. But I want to understand what those are and what data they provide to you as planning engineers?

A (Walker) A quick second to briefly confer?

Q Go ahead. That's fine.

[Witnesses conferring.]

MR. KREIS: Mr. Chairman, Commissioners, while the witnesses are conferring, I am loath to object to questions posed from the Bench. Any competent lawyer would know better than to do that.

But I just would like to point out, respectfully, that what Commissioner Simpson is essentially doing here is writing the Company's

Least Cost Integrated Resource Plan for it. And, really, it's the Company's job to prepare that plan. It isn't the Commission's job to tease such a plan out of a utility.

CHAIRMAN GOLDNER: You can't argue, though, that this is not a cost-effective solution. He's doing it for free.

MR. KREIS: Indeed. Well, he's not doing it for free, because the ratepayers are paying for --

CMSR. SIMPSON: I'm not -- I am not writing the Company's Plan. I'm trying to meet my burden under the statute to ensure that the Company has met their requirements under the prior orders of the Commission and RSA 378.

MR. KREIS: Understood. And I guess I am concerned about that, because you aren't the -- you, the Commission, aren't the only people in the room with a burden. This Company had a burden, which it isn't meeting. And your questions demonstrate, in part, why that is.

CMSR. SIMPSON: I don't understand, and I don't agree with that characterization. I'm not writing the Company's Plan. I'm trying to

understand what the Company has filed, so that I can determine whether or not what is on the record complies with the statute and prior orders.

CHAIRMAN GOLDNER: Let's proceed with the witness.

BY THE WITNESS:

A (Freeman) Okay. So, thank you. So, I don't -- maybe we weren't as elaborate in the discussion of the forecast, and we can certainly revisit that. But I just want to make sure that we are clear that the forecast is the starting point, right? And, once we develop the forecast down to the bulk substation level, we use that to do the planning analysis for the substations and the feeders, right? So, we don't push it down, we don't do a forecast at the circuit level. But we take the substation level forecast and we push it down to the feeders.

And, if that process of developing a forecast is not satisfactory, we will certainly revisit and have that discussion. But I just want to make sure that you are satisfied with the discussion of how we came up with those numbers

that are so critical to the planning study going forward? So, let's start there.

BY CMSR. SIMPSON:

Q So, I'm not going to opine on whether or not I'm satisfied with the discussion. I'm trying to understand what's on the record before us here today, and to contextualize the various devices and system improvements that are outlined in the record, and how those relate to least cost integrated resource planning? Why the Company has described them here? Why they're relevant? That's what I'm trying to understand.

A (Freeman) Okay. So, having developed the forecast, the ten-year planning study, I think, is the crux of the whole matter.

Q Okay.

A (Freeman) And that's what Mr. Cosgro has described. That ten-year planning study results in violations at the substation and at the circuit level. And then, understanding of those violations, we then develop solutions that are documented in the Solution Selection Forms. And, so, and that, I think, was one of the requirements that you just read that we should

have.

So, I will allow Mr. Cosgro, who has already described the ten-year planning study, and described the violations, which are in Exhibit 4 and Exhibit 3, starting on Bates 097, for each substation and each circuit. And, now, if you don't mind, describe some of the Solution Selection Forms that resulted from those studies.

A (Johnson) Can I just interject something first that might of help?

What we've been talking about here is the planning side of it. But, to provide, you know, to demonstrate the accuracy of their planning models, we have put in numerical relays in substations that give us real-time data to PI.

Q Uh-huh.

A (Johnson) We have, you know, implemented pole-top DSCADA devices that, again, provide instantaneous feedback, it's all stored in PI, all with loading data. So, you know, not only do we do the planning side of it, but we have that real-time visibility into the system. And we recognize the loading. We know real-time what the loading is on those circuits.

And, if, in fact, you know, again, the distribution planning piece deals with the interconnected 34 and a half kV system or interconnected 12 kV system. You know, beyond that in the system, it's my group that looks at the actual circuit loading deeper into the system. And we're looking at that, you know, those real-time loads, and identifying the need for any upgrades that are needed beyond that.

So, you know, from a circuit forecasting perspective, beyond that, I mean, yes, we start with that base forecast that they have. But, you know, when you get deeper into the system, you really have to look at those individual spot loads in a much more defined way than they need to at that higher level. I mean, we have to look at, you know, the individual URDs going in, the individual commercial buildings going in, deeper into the system to identify the system needs at that point. And they have really been talking about that larger, higher level, ten-year kind of system planning.

Q Uh-huh.

A (Johnson) So, you know, and even when they

identify a circuit, you know, a interconnected 34 kV violation, say, a loading violation that creeps into their arrangement, they have the ability to go in and actually pull real PI data to evaluate that, and accurately establish what the system needs are.

Q Is that information before us today?

A (Johnson) It is not. I think there was a misunderstanding about, you know, to us, it was implied, in that all of the violations were identified in what was provided. The loading, by circuit breaker, was not, as far as I can see, you know, included in the record. You know, which is, you know, if you're talking by breaker level -- how many breaker-level circuits do we have? Two fifty (250), something like that, 250. So, okay.

Q Okay. So, you identified at a substation level the future demand. And I think there was a statement that there may be a gap from what the Company has provided, relative to what the Company agreed to in your last Settlement Agreement, with respect to the substation level breaker data. It doesn't appear to be here.

So, --
A (Freeman) Correct.
Q Okay.
A (Freeman) But the results are there. But the actual data that was used to produce those results is not there.
Q Okay. So, then, --
A (Freeman) At the breaker level.
Q Okay. Thank you. So, then, the next sections of the statute speak to the "assessment" that the Company is doing. So, you forecasted your demand. And then, you have to assess different options, in order to meet that future demand. Do you share that understanding?
A (Freeman) Yes.
Q Okay. So, those assessments include "demand-side energy management programs, including conservation, efficiency, load management"; "Supply options, including capacity, market procurements, renewable energy, and distributed energy resources"; "distribution/transmission requirements, an assessment of the benefits and the costs of "smart grid" technologies, the institution or extension of electric utility

programs designed to ensure a more reliable and resilient grid to prevent or minimize power outages, including but not limited to, infrastructure automation and technologies."

So, those three categories speak to "infrastructure". Would you agree?

A (Freeman) They speak to initiatives and programs, not necessarily -- because, like, demand-side management and energy efficiency, I wouldn't classify those as "infrastructure". They are programs and initiatives.

Q And what do you need in order to implement those programs?

A (Freeman) You need communication.

Q What do you need to communicate?

A (Freeman) You either need wireless communication or wired communication, which I guess could be described as "communication infrastructure". But, when we talk about "infrastructure", we're normally talking about "electrical infrastructure".

In a general sense, if that's your point, then I take it, yes.

Q So, in order to meet your future demand, --

A (Freeman) Uh-huh.
Q -- you have to compare options of different investment strategies?
A (Freeman) Yes.
Q Okay. So, explain to me how the demand forecast, that's in Exhibit 1, maps to an evaluation of these different options?
A (Freeman) So, let's start with the demand-side management and energy efficiency, which is described in Exhibit 1, Section 11. And I will have Mr. Walker talk through how the Company administers its demand-side and energy efficiency programs, how those impact the forecasts, and how those could be used for planning purposes going forward, --
Q Okay.
A (Freeman) -- including non-wires alternatives analysis.
A (Walker) Yes. So, as mentioned earlier, for the forecasts, all the known energy efficiency programs and historical energy efficiency trends are included in that forecasted data. The same thing goes for demand response. So, we already have the impact of those programs inherently

present in our forecasts. Our normal economic trend load forecasts would be higher without those baked in.

Then, in addition to that, and that's described in Exhibit 3, Appendix A-1 and A-2, with the NWA framework.

Q Just a moment.

A (Walker) Yes. No worries.

[Short pause.]

CONTINUED BY THE WITNESS:

A (Walker) And the NWA framework is on -- starts on Exhibit -- so, this is Exhibit 3, Part 1, Bates 002, that's where the NWA framework starts. That then allows us to evaluate energy efficiency and demand response, as an alternative to a traditional capacity investment, in form of a non-wires alternative. So, those would be above and beyond existing energy efficiency impacts, demand response programs, energy efficiency programs, as I think was termed earlier, geo-targeted solutions.

BY CMSR. SIMPSON:

Q Okay. So, explain how, in this case, your non-wires alternatives framework maps to the load

forecast, as described in Exhibit 1, for each of the -- each of the forecasted loads?

A (Walker) So, let me first, just so we are all on the same page, put a bit of a clarification around what a "non-wires alternative" is.

So, traditionally, we would change the assets to match the load; with a non-wires alternative, we are essentially changing the load to match the asset that is there. That is, conceptually, the idea.

So, with a non-wires alternative, that can include anything from energy efficiency, demand response, storage systems, local generation, being it renewable, PV, local generation, that's generators, gas/diesel, there's a lot of alternatives there. Conservation voltage reduction programs, there's a wide array of options that allow us to change the load to match the existing asset.

Now, when we look at the load we need to change, that's our forecast. So, if we have our station level forecast, as we've described, we can look at our station capacity, and we determine then the projected load is above

station capacity.

Now, the process here would then tell us to go in and say "By how much are we above it? Is it one megawatt? Is it two megawatts? By when are we above? Is it 2025? 2027? How much time do we have to accommodate this?"

And then, the next big question we have to answer is not just by how much, but, essentially, "How long?" Is it a very short violation? Is it a long violation? Does it happen once a year? Does it happen 20 times a year? Thirty (30) times a year?" That goes into the design of the solution.

Generically speaking, a non-wires alternative has a higher rate of success, if it's a smaller violation that doesn't occur that often, compared to a more expensive, traditional solution.

Violations that we see, you know, say, 80 percent of the time throughout the year that are of large magnitude are very hard to address with flexible solutions, because they either require customer participation through demand response programs, they are dependent on weather

patterns, if you're looking at solar, and there's a lot of variance in there.

So, we do a 24-hour load profile analysis. So, we do have an actual projected load profile. We look at how solar might change that load profile, how energy efficiency might change that load profile. We look at what demand response can do, if it is triggered at peak load, and how it might pull that down. We look at, you know, preconditioning and snapback effect from demand response.

And we create alternative load profiles based on different solutions that we're looking at in the NWA screening process. So, one example could be I deploy solar storage, how does that change my future load profile? And, when I say "future load profile", that is the forecasted profile. That already includes economic trends, it already includes what we are projecting as naturally growing solar in the region. And, so, what's the normal adoption going to look like?

If we go into the NWA process and look at alternatives, we will go above and beyond that. So, if the forecast says you're deploying

20 megawatts of solar there already, the load curve we ingest into this process already has what you would call the "duck curve", right? It already has the dip in the middle. We already have all of that in that profile baked in.

And then, we look at what else we can add. And our tools allow us to add solar, and change the profile again of the load. It will allow us to do storage, and I will simulate the dispatch for storage. And that will give us, you know, an indication if these solutions are technically viable, to modify and set the load shape sufficiently enough to get it below the asset's capacity.

And, so, that's basically the way we look at this. And I really do want to make this clear that there is a portion of what we forecast, then, when we look at alternative solutions, that has nothing to do what's in the forecast, because that's done and there is a profile for that, a load profile. Everything we look at alternatives is incremental above and beyond.

What can, of course, in this scenario

happen is that, with what's baked in the forecast, we've already avoided an upgrade. And say the normal load growth would get us past capacity, but we also project 20 megawatts of solar growing in the region, and 4 megawatts of energy efficiency. And I'm making these numbers up. And that brings the forecast back down again in the station capacity.

So, distributed resources, energy efficiency, and demand response, just inherently, in how we create the forecast, have already deferred a capital project. They have already got rid of it, and pushed it out past the ten-year horizon.

But, if that's not enough, and we still project the load to grow, then we go and look at incremental above and beyond. And that's what the NWA process looks like, and that's what I've just described.

Q Okay. Thank you. So, with your load forecast, you evaluate whether or not the infrastructure that makes up your system today, or back in 2020, was capable of serving the load as you forecasted, correct?

A *(Witness Freeman indicating in the affirmative).*
A (Walker) Yes. Well, one clarification on that point.

If we have a forecast for a station, for example, and we have a known capital project at that station to expand capacity, --

Q Uh-huh.
A (Walker) -- even if that's not completed, and that does not represent 2020 status of the station, say it's scheduled for 2024, we will consider that in our evaluation, of course, because we do know that the capacity will expand. So, any future load that's forecasted past that point will be mapped against the new capacity of the station at that point.

So, we do take existing capital projects into consideration.

Q So, can you explain and point to where the Company has identified the areas of your system that did not meet the planning criteria to serve your forecast load?
A (Walker) I would defer that to Mr. Cosgro.
A (Cosgro) You have the -- the areas that would be in violation wouldn't have the capacity to meet

the system needs, that is the report in Exhibit 3, Part 1, Bates Page 087. So, that's that ten-year study identifying the system needs.

Q Okay. So, what were your results? Explain the results to us please? What were the gaps?

A (Cosgro) So, this report identifies capacity and voltage deficiencies in the system. And it goes into a location-by-location transformer, circuit, or feeder, breaker line issues. And this document identifies all of the locations across the State of New Hampshire.

Q That the Company identified as "insufficient" to meet your load forecast?

A (Cosgro) Load forecast, yes. Yes.

Q Okay. So, I would expect that each of these items identified would have an evaluation of options, looking at 378:38, II, III, and IV, that you say your assessment, your load forecast, says that these elements of your system would require upgrades in order to meet your forecast. Subsequently, we've evaluated various options in order to address that issue.

Do you agree with that?

A (Cosgro) Yes. That report that I referenced

initiates that detailed analysis of solution alternatives, including the NWA screening.

Q Okay. So, let's take the first one, the "310-345 Circuit Tie". So, describe your assessment of demand-side energy management programs, supply options, and T&D requirements to serve that need?

MS. SCHWARZER: I apologize. Could you please give us a Bates Page for the --

CMSR. SIMPSON: I'm looking at Exhibit 3, Bates Page 091.

MS. SCHWARZER: Ninety-one (91). Thank you.

BY THE WITNESS:

A (Cosgro) Yes. I believe the Commissioner is referencing the first bullet point under the year "2020".

BY CMSR. SIMPSON:

Q That's correct.

A (Cosgro) So, with a identified need from the ten-year study, we would identify either capacity upgrades or, if it's reliability-based, you know, Contingency N-1 concern, we would identify solution alternatives like a circuit tie, or maybe perhaps reconductoring of the line or

creating a automated circuit tie for where a manual one presently exists. So, this ten-year document identifies high-level initial solutions, --

Q Uh-huh.

A (Cosgro) -- with possible -- it identifies a need, with a possible solution. This is not going to be the guarantied solution or the solution that would be eventually built. It just gives some guidance for the continuation of this ten-year study to continue, saying that, in 2020, we're assuming that a circuit tie is built between the 310 and 345 circuits. And that allows the ten-year study to carry on with its analysis, assuming something is done to address that need.

So -- sorry, do have a question, Commissioner?

Q So, -- yes. So, explain how you evaluated solutions against this identified issue?

A (Cosgro) So, at -- sorry. At this point, the review of alternatives has not happened. This is just identifying needs. So, once the ten-year study has been concluded, we then take those

needs, and then perform a specific system analysis of that location. So, we do a specific study, you know, in other examples, of a substation location that we've identified needs. In this case, the 310-345 circuit tie, some of the alternatives may be taking a manual circuit tie and automating it, constructing a circuit tie from Point A to Point B.

Q Uh-huh.

A (Cosgro) Or, in this case, you know, providing a specific location from the posts and location referenced in this document. So, the solution alternatives, along with an NWA screening today, are then compared.

And, in terms of other alternatives, I'll refer to Mr. Walker.

A (Walker) Yes. So, as Mr. Cosgro mentioned, right, that just states the need. The actual solution design hasn't been done yet. But, just looking at this type of specific project, based on the criteria we discussed in the direct examination earlier this morning, would probably not be screened for a non-wires alternative, given its overall size of project, probably below

the 3 million mark.
Q What about being evaluated against demand-side management programs, supply -- I'm just reading from the statute.
A (Walker) Yes. No, no. So, from demand-side management programs, those all follow the NWA analysis. And, based on that threshold, where we are proposing to investigate a lower threshold over that three-year period, would not be considered here.
Q Okay. What about the next category? "Supply side options, including owned capacity, market procurements, renewable energy, and DER"?
A (Walker) So, DER, as they would offset local load would follow the NWA, if they are not part of the forecast, right? So, again, back to my original explanation. If we have a forecast that includes DER, that's inherently included. If we have to go above and beyond that as a non-wires alternative, based on the size of the project, we would either screen it in the NWA process or not.
Q Do you have that screening process articulated here? To say that this, this particular issue, your 310-345 circuit tie, that here's your test

for whether something should be considered within a demand-side management program? It doesn't meet that test. So, go to the next one. And, if this one, this issue, doesn't meet our criteria for distributed energy resources, which you're referring to generally as a "non-wire alternative", it didn't meet that. So, we go to the next one. Is that here?

A (Freeman) Yes. So, I'll let Mr. Walker continue. But, on that second bucket of possible solutions, it's important to note that Eversource does not own generation. And, so, therefore, Eversource owned generation is not a solution alternative that we would consider for a distribution need.

Now, Mr. Walker did make the point that a distributed energy resource, that's maybe owned by a third party, could be considered part of an NWA. But, then, it would have to be a distribution asset that we control. And, if we don't have operational control of it, then it is not a dependable asset and cannot substitute for distribution criteria.

Q Are you aware of New Hampshire RSA 374-G?

A (Freeman) I can't say that I am, no.

Q It's a New Hampshire law that enables a pathway for the regulated distribution companies to invest in distributed energy resources.

A (Freeman) Then, to the extent that we do have a mechanism for building distributed energy resources, that's utility owned and controlled, then, yes. That would be something we would consider.

Q Okay. But you didn't evaluate this particular issue against a DER option?

A (Walker) So, to get back to this specific 310-345 circuit tie.

Q Yes.

A (Walker) And, if I understood Mr. Cosgro correctly, is we haven't gotten to the point of that evaluation yet. So, once we come to the final solution design, yes, they will be evaluated. Yes, distributed generation, as part of the non-wires alternative process, will be evaluated.

And, to your question, where that specific process is outlined in the filing, I would refer you to Exhibit 3, Appendix A-1. That's Bates 002 of Exhibit 3.

Q Just a moment. Exhibit 2?
A (Walker) Bates 002.
Q What exhibit, I'm sorry?
A (Walker) Oh. Exhibit 3, Bates 002. That is the NWA framework that outlines how we would evaluate any distributed generation, energy efficiency programs, or other methods we have to adjust the load to match the need.
Q Uh-huh. Did you apply that framework against this tie line issue?
A (Walker) No. As Mr. Cosgro mentioned, we haven't gotten to that point for this project yet.
Q Mr. Johnson.
A (Johnson) For the record, I mean, I just need to correct that. That project was completed back in 2020. So, it was prior to the recent framework that we have.
Q Uh-huh.
A (Johnson) And, again, it was purely a reliability-driven job. It was a circuit tie, less than a million dollars. So, even by the framework criteria that we have, --
Q Uh-huh.
A (Johnson) -- it would not have been one that

would have been reviewed. But it was completed prior to the framework that we have been discussing here, going forward.

Q Yes. I understand that. I think your load forecast, fundamentally, at what we're trying to achieve here is, you perform a load forecast. Through that load forecast, you identify system needs. Those system needs are then evaluated against multiple options. And the Company determines whether or not each option is the most economic.

That's all I'm trying to understand here, is whether that exercise has been performed, and what the results were.

A (Johnson) Of course.

A (Freeman) And I know Mr. Walker said this, but all of these -- all of these projects that are listed are in various stages of development. Mr. Johnson just mentioned one that's complete. There are others that are ongoing, for which we have performed an analysis of alternatives, that has been documented in an SSF, for example. So, they are not all presented in this document, with all the alternatives. Because, at the time that

it was filed, they had been discovered, identified, but then the process of developing the alternatives was not complete. It's a moving target. Because some of these, the need is maybe five years down the road, and then we would develop a plan moving towards that in-service date.

A (Walker) Commissioner, would it make sense, we have, in Exhibit 3, Part 1, Bates 047, a detailed report of exactly one of those comparisons that you were looking for for that specific circuit tie. Now, that's a different project. But, perhaps, if we walk through that step-by-step, it would answer a lot of the questions that have been asked. Perfect.

Q Just a moment. What you're about to address, does it evaluate the circuit tie issue against non-wires alternatives?

A (Walker) This is for a different project. This is not for the specific circuit tie. This is for the option to upgrade at Loudon --

Q Okay.

[Court reporter interruption.]

CONTINUED BY THE WITNESS:

A (Walker) Sorry. That is for a different project. This would have been for Loudon Station to compare a transformer upgrade against different options.

BY CMSR. SIMPSON:

Q So, can one of you refresh my memory what Bates page the list of projects was? I think Mr. Cosgro had initially pointed it to me, where we first looked at those 2020-2021 issues identified?

CMSR. CHATTOPADHYAY: I think 087.

BY THE WITNESS:

A (Cosgro) Eighty-seven (087).

MS. SCHWARZER: I'm sorry, did you say "070"? I couldn't hear your answer.

WITNESS COSGRO: I was advised it was Bates Page 087.

MS. SCHWARZER: Thank you.

BY CMSR. SIMPSON:

Q It was Bates Page 091 of Exhibit 3. If we go further through this list of projects, are we going to be able to identify an evaluation for each of these projects that maps to the requirements of the statute for each requirement?

A (Cosgro) So, Loudon was provided as an example. It would not have been --

Q Which Bates page is that? I don't see that in this list of planning projects.

A (Cosgro) So, Loudon was not included in the original ten-year study, due to the original ten-year study focusing on the bulk power system, distribution system. Loudon is a non-bulk substation, --

Q Uh-huh.

A (Cosgro) -- which is supplied by the distribution system. So, that was not originally located in this ten-year study. It was located -- the need was identified outside of this ten-year study report.

Q Okay.

A (Freeman) So, I think what might be helpful is if we go through each one of these projects, Mr. Cosgro, and give the Commission an indication of the status, where was it --

Q I'm really more interested in the evaluation. I'm more interested in seeing an evaluation, as required by the statute, against the projects that the Company identified that are necessary to

meet your load forecast.
A (Freeman) Right. And that's my intention. Because most of these, when we filed this in 2020, they were not at the stage where we could produce an evaluation. Loudon is an example of the evaluation.
Q And I just struggle with that, because the statute has been in place for years that has required this evaluation.
A (Freeman) These were identified by the ten-year study --
Q Uh-huh.
A (Freeman) -- at the time, and the ten-year study, that was done in 2020, says that these projects are needed after 2020. And, so, when we filed the LCIRP, it was meant to indicate that these are the projects that we're going to plan for and develop alternatives in the future. So, when we filed the LCIRP, we hadn't done that work yet to develop alternatives. We have subsequently done that work. But it wasn't available at the time of filing.
Q Is that in the record?
A (Freeman) The work that was done subsequent to

the filing?
Q Yes.
A (Freeman) No. But we did provide some Solution Selection Forms that -- for projects that were available, that were further along at the time of filing.
Q Okay.
A (Freeman) And, so, those are in the record. And the Loudon was provided as an example. Because, just to set some more context, when we did this LCIRP, the NWA framework had just been developed. It was finalized in 2020, I think, in that same fourth quarter of 2020. So, the Company did not have a formal tool or framework for NWA analysis. So, when we did the analysis, and identified these projects, we knew going forward that we would perform a non-wires alternative assessment for each one of these that were suitable, that met the suitability criteria.
Q Uh-huh. But it's more than just non-wires alternatives. It's much broader.
A (Freeman) Correct. Correct. Yes, of course, we would do the traditional analysis. For the non-wires alternatives to look at energy

efficiency, demand response, we would do that. Supply options, those are also included in non-wires alternatives.

So, when we say "non-wires alternatives", it's actually pretty broad. It encompasses a lot of the things that are mentioned in the statute that should be considered, in addition to traditional alternatives.

Q So, then, what -- okay. Let's talk about traditional.

A (Freeman) Yes.

Q That's IV. So, "an assessment of distribution and transmission requirements, including an assessment of the benefits and costs of "smart grid" technologies, and the institution or extension of electric utility programs designed to ensure a more reliable and resilient grid to prevent or minimize power outages, including but not limited to, infrastructure automation and technologies."

Can you point me to that evaluation?

A (Freeman) Yes. So, in --

Q And let's stay on the circuit tie, the 310-345

circuit tie.

A (Freeman) We don't have that evaluation for the circuit tie.

Q Okay.

A (Freeman) Because, as mentioned --

Q What about the "Lost Nation Substation Transformer"?

A (Freeman) It's not in the record.

Q Okay.

A (Freeman) Because it wasn't done at the time that this was filed.

CMSR. SIMPSON: Okay. Thank you all for your testimony today.

Mr. Chairman, I don't have any further questions.

CHAIRMAN GOLDNER: Okay. Let's take a short break, returning at 3:00. And we'll pick up with Commissioner Chattopadhyay's questions at that time. Thank you.

(Recess taken at 2:49 p.m., and the hearing resumed at 3:10 p.m.)

CHAIRMAN GOLDNER: Okay. We will continue with Commissioner questions, and Commissioner Chattopadhyay.

CMSR. CHATTOPADHYAY: Just give me a minute. Let me set it up.

WITNESS FREEMAN: Commissioner Simpson, is it possible for me to clear up a misunderstanding from the previous question, before we go forward?

CHAIRMAN GOLDNER: Yes, please.

WITNESS FREEMAN: Okay.

BY THE WITNESS:

A (Freeman) So, I had stated that, for the projects that we were discussing, those list of projects that were identified from the 2020 study, --

BY CMSR. SIMPSON:

Q Yes.

A (Freeman) -- the analysis of alternatives, those were not in the record, because those projects were just being initiated. However, in March of 2021, we did file a supplement, with detailed information on projects that were initiated prior to the LCIRP being filed. And those included documentation of information on those projects.

Q Uh-huh.

A (Freeman) And that's in Exhibit 4, which is the confidential version, which may be the same as

Exhibit 3, starting on Bates Page -- on Bates 415. So, it's Exhibit 4, Part 2, Bates 415. And, in that appendix, we provide initial funding request forms for several substation projects, Ashland, Bridge Street, film Chestnut Hill, Derry distribution.

But, more to the point, we also provided several Solution Selection Forms. So, for example, on Bates Page -- Bates 435, the White Lake SSF is presented.

Q Four thirty five (435)?

A (Freeman) Bates 435, yes. And that is a substation project that was initiated prior to the LCIRP, that had gone through our capital project approval process to the point that it was being presented to the Solution Design Committee.

Q Uh-huh.

A (Freeman) And, so, the SSF, it documents the solutions, the alternatives that we presented to the Solution Design Committee. And, as part of that evaluation, we would have looked at whether a non-wires alternative would have been an option. But, given that this was an asset condition project, was initiated because

equipment was failing that needed to be replaced, it was determined at the time that demand response, energy efficiency, supply side options were not applicable for this project.

Q Uh-huh.

A (Freeman) So, I just wanted to point out that.

Q Yes.

A (Freeman) And we do have that for three projects: Cocheco Substation, similarly, starts at Bates 448, and the Monadnock Substation starts at Bates 452. All these three have very comprehensive Solution Selection Forms that document how we develop the alternatives for each of those projects.

And, then, following that, there are several PAFs, which are "Project Authorization Forms", that is the documentation that goes to the EPAC Committee for funding. And, again, those include a description of the cost estimates and the engineering that was done for those projects.

So, I just didn't want to leave it on the record that we didn't document any project design process. We just didn't do it for those

projects that were initiated right after the LCIRP, because we didn't have the time to do that yet, if that makes sense.

Q Were those -- so, you're referring to projects in 2020 that are listed in Exhibit 3?

A (Freeman) That's correct. The ones that we were discussing prior to the break, that we said were generated by the system assessment that was done in 2020. Those projects were newly initiated, and they would be taken through the same process as these projects that I just discussed; initial funding requests, Solution Selection Form.

Q Uh-huh.

A (Freeman) But, at the time when we filed the LCIRP, we had just started the process. So, we don't have the documentation yet.

Q What about like the '21 projects?

A (Freeman) Projects like --

Q Like the "Weirs Regulator Upgrade"? Because how I understand the LCIRP is to be a forward-looking instrument, that you would perform a forecast of your system.

A (Freeman) Yes.

Q And you would identify gaps in order to serve

load that you're forecasting. And, when you identify those gaps, you identify certain projects that require upgrade.

And I think what the Least Cost Integrated Resource Planning statute is intended to require is that, when you identify a system need, that you evaluate that need against potential alternatives. That, when you have a substation issue, you have a transformer that might be overloaded, that you think about "what's causing that overloading? What loads are driving that?" And that you're considering "Could I do something else, other than upgrading that transformer? Could I do something else other than upgrading that regulator? And, if I do that, what's the cost of that alternative? Is it a lower cost than doing the traditional upgrade?"

That was really what I was trying to understand.

A (Freeman) Yes. And you are completely correct. But, remember, the LCIRP is a snapshot in time.

Q Uh-huh.

A (Freeman) And, so, if you take a snapshot of 2020, when we filed it, all of those projects

that we just discussed, including that Weirs project, --

Q Yes.

A (Freeman) -- they were not at the stage yet where we have done that analysis that you just described.

Q Yes.

A (Freeman) But projects that were initiated prior to 2020, which are the ones in Exhibit 4, those ones we have done that analysis of alternatives, and understood what we need to do in order to meet the forecast.

Q Okay. So, Monadnock?

A (Freeman) Yes.

Q That's the one that you brought up, I think, originally, right?

A (Freeman) Correct.

Q So, going back to the first three assessments, following your load forecast of future demand, can you point to where you evaluated replacing those two 62 and a half MVA transformers against a demand-side management program or a different supply-side option, like a DER, or other T&D investments?

A (Freeman) And it just so happens that Monadnock is not a great example of that.
Q And why not?
A (Freeman) Because it was an asset condition project.
A (Walker) And, to clarify on this, when we talked before the break, the way we defined the "non-wires alternatives", which includes energy efficiency, demand response, local-sited, is to modify the load shape to match the asset.

And, if we have an asset condition project, there isn't a problem with the asset's loading, it's a problem with the asset. And I can do as much changing of the load profile as I can think of, --
Q Uh-huh.
A (Walker) -- and I will still not be able to address that. That's why that exclusion. And my understanding is it's also -- that is written in the Solution Selection Form, --
Q Yes.
A (Walker) -- that's what's in the document, was not preceded there, and then these are the prescreening criteria that early on we were

talking about, which disqualified any further steps there.

Q Yes.

A (Walker) So, to the statute, yes, the Company has the process. Yes, the Company did look at those solutions, but determined, due to the type of project we are looking at, that no further investigation of non-wires alternatives is needed.

Q And that's an important evaluation to conduct. But would you agree that a non-wires alternative is just one type of alternative to this particular system issue?

For example, could you have implemented conservation voltage reduction on the circuits that that transformer serves, to lower the overall demand on that circuit, and alleviate the issue that you're facing in that? I don't know.

A (Walker) So, yes. So, I mean, yes -- so, the answer to that question is "yes and no". And let me try to split that out a little bit.

Q Sure.

A (Walker) So, non-wires alternatives in and of themselves are not the only options.

Distribution planning looks at various options that are traditional solutions, and could be a transformer upgrade, it could be VVO **[?]** conductoring to push loads to other substations. There is a whole array of options that we have that we look at.

Under the umbrella of "non-wires alternatives" falls everything that doesn't address the capacity of the asset, but changes the load to match that, including conservation voltage reduction.

Now, if the project is an asset condition project, right, if I design a non-wires alternative, it's changing the load. But I have a problem that my asset is old and failing.

Q Is that this case here, for Monadnock?

A (Johnson) Yes.

Q It was an old transformer?

A (Walker) Yes.

Q Okay. Or, two transformers.

A (Walker) And that is the reason why we did not continue with the NWA analysis, including all of the technologies that fall under it, demand response, --

Q Uh-huh.
A (Walker) -- energy efficiency, conservation voltage reduction, local generation siting, because doing so would change the load profile, but it would not make the transformers younger, so to speak.
Q Uh-huh. Okay.
A (Walker) So, that's why, in that Solution Selection Form it was disqualified, and we moved forward with a traditional solution.
Q So, with --
A (Freeman) Could I --
Q No, go ahead.
A (Freeman) I'm sorry. For the documentation, can I refer you to Bates Page 365 --
Q Of what exhibit?
A (Freeman) Exhibit 4, Part 2.
Q Just a moment.
A (Freeman) That's the same Monadnock SSF. So, Bates --
Q Just a moment.
A (Freeman) Yes. I'm sorry. I was just repeating it. Bates 365, Exhibit 4, Part 2.
Q Okay.

A (Freeman) Okay. So, that's under the heading "Solution Needs and Options". And it talks about "The above planning criteria is intended to maintain safe, reliable operation." And then, it says we can address it with the following measures: We can "reduce the load or increase the capacity to address the LCC", which is the "Load Carrying Capability", "deficit", and we can "reduce the load or increase the transformer capacity to address the STE deficit", which is the "Short-Term Emergency" rating deficit. We show the two violations that were identified based on the forecast.

And then, on Bates 366, it goes on, under the topic of "Preferred and Alternative Solutions", to say that "Ultimately, there are two possible solutions to increase the contingent capacity at Monadnock Substation."

Q Let me just stop you there. I thought this issue was an asset management issue, it was driven by life of the transformer?

A (Freeman) Correct. So, it's documented that, on the top of the page, that "the possibility to address capacity deficits by reducing the

existing load including non-traditional solutions", which are the ones that we described, --

Q Yes.

A (Freeman) -- "such as battery storage, solar, energy efficiency, and demand response, as well as increasing capacity with traditional solutions" were considered. "Unfortunately, due to the combination of the immediate need, and the poor condition of the transformer, the Long Term Health Index being over 0.5...non-wires solutions will not be considered."

And, so, that documented the fact that, because it's an asset condition project, with an immediate need, and an aging, unsafe transformer, we could not look at battery storage, demand response, energy efficiency, or any supply option, to alleviate this need. But we did consider those as alternatives.

A (DiLuca) And if I could, just to build on what my colleagues have referenced?

Q Please.

A (DiLuca) Also, in Exhibit 4, Part 2, Page 449, similar to what Mr. Freeman has just referenced,

there's a non-wires write-up, a short paragraph though it may be, and, if this would be done under today's toolset for NWA, it would probably be much more thorough. But at least it is referencing why energy efficiency/distributed generation would not likely fix this problem, even if it wasn't an asset condition, because this was with Cocheco Street, and that was also an asset condition.

So, just citing another example.

Q Uh-huh. So, it was really asset management that drove this. And then, because of it, you evaluated -- or, at least you said you evaluated against energy efficiency/demand-side management?

A (DiLuca) Correct.

Q I guess, with this particular project, is it driven by your future demand forecast?

A (Freeman) Yes. It was a combination of asset condition --

Q Okay.

A (Freeman) -- and future demand. But the asset condition took precedence, because it became safety issue, and safety always takes precedence.

Q Okay. What about South Milford?

A (Cosgro) So, at the time of the LCIRP filing, South Milford was in a "draft" state. That study is still ongoing. And today's version of the report does have an NWA analysis. However, that was not included in the LCIRP at the time that the filing was made.
Q What drove South Milford?
A (Cosgro) South Milford is a capacity project.
Q Okay. So, can you show me the evaluation for that transformer, like we just walked through for Monadnock?
A (Cosgro) So, there is no Solution Selection Form, because that project has not reached that stage yet. However, there is a study in the attachments.
Q Uh-huh. Okay. Where is that? Can you give me a Bates page please?
A (Cosgro) Yes. I just need one minute.
Q Take your time.
MS. SCHWARZER: Excuse me, Commissioner? In an effort to be helpful, there is a reference to South Milford in Exhibit 4, Part 2, at Bates 376.
WITNESS COSGRO: You just beat me to

it. Thank you.

MS. SCHWARZER: Sure.

BY CMSR. SIMPSON:

Q Okay. Bates 4 --

A (Cosgro) Exhibit 4, Bates 376.

Q Okay. Just a moment.

A (Cosgro) If it helps, Commissioner, it's *pdf* Page 40.

Q Yes. My computer, I have so many large *pdfs* open, it struggles here. So, okay.

So, I'm looking through, this is a report for South Milford.

A (Cosgro) Correct. So, this is an example of a localized study --

Q Uh-huh.

A (Cosgro) -- that we would do to reconfirm the need that we've identified from the ten-year study, and also to compare alternatives. So, at the time that this report was included in the LCIRP, an NWA analysis had not been completed yet.

Q And then, what about like other distribution and transmission options?

A (Cosgro) Traditional wire solutions were included

in this report. Since the report was filed, other alternatives have also been included.

Q Okay. Can you -- can you just point us to that assessment, the traditional wires assessments?

A (Cosgro) Bates Page 390 is the start of the traditional solution analysis to identify what traditional components would resolve the needs.

Q Okay. So, you're saying "Reduce load at the transformer, increase system capacity", and then "reduce load or increase [two] feeder capacities", right?

A (Cosgro) Correct.

Q So, did you identify what the costs would be of each of those options?

A (Cosgro) I believe there are order of magnitude costs included in this. However, the project, overall, has not reached that stage yet where it's looking at costs.

Q And then, map this to -- from Exhibit 1, the tables that you had, let's see. So, Exhibit 1, starting on 52, Bates 052, which table would identify the Compound Area Growth Rate that drove your future need?

A (Cosgro) So, South Milford is covered in the

table on Bates Page 054, which includes the Southern Region.
Q Okay. So, your forecast identified that you would have a capacity issue there, right?
A (Cosgro) Correct.
Q Okay. And then, what about the assessment for various environmental impacts?
A (Cosgro) The South Milford project has not reached that stage yet.
Q Okay. And, the last criteria, the "plan integration and consistency with the state energy strategy", did you identify how this project aligns?
A (Freeman) I'm sorry, can you repeat that, Commissioner Simpson?
Q Did you identify how this project would align with the state energy strategy? I'm just going down the statute.
A (Freeman) Yes. Can you -- if you don't mind, can you read the statute?
Q Absolutely. It's VII of 378:38: "An assessment of plan integration", so, overall plan integration, "and consistency with the state energy strategy."

A (Freeman) Give me a second, I'm turning to that.
A (Walker) I don't believe it specifically, I mean, while you look it up, but subject to what Mr. Freeman is checking, I don't believe it specifically calls that out. But, this project specifically, as it would increase the capacity of the station would support further electrification on the load side, be that electric vehicles, heat pumps, --
Q Uh-huh.
A (Walker) -- as well as increase the hosting capacity of the system. So, it will provide for more capacity for either commercial DER development or rooftop residential DER development.
Q Uh-huh.
A (Walker) And I think that applies broadly to almost all capacity projects that do get through the screening process and they provide those capabilities.

And, especially since, if you allow me to comment, if we're looking at the long-term forecasts, which we did mention that we're starting to do now in New Hampshire, and will

include in the next LCIRP filing, we're expecting, at a minimum, a doubling of the system load over the next 20 to 30 years as electrification progresses.

So, yes. That's how these projects, specifically this one, support those objectives.

Q So, I just want to return to the list of projects that we were going through. Which was in Exhibit 3, yes, Bates -- starting on Bates 091.

I mean, this, to me, is your plan. This represents what should be your long-term plan. These are the items that you feel are necessary in order to address -- in order to meet your demand forecast. Would you agree?

A (Freeman) Those items, along with -- so, going forward, yes. If you take a snapshot in time, --

Q Yes.

A (Freeman) -- going forward, these are the items that we need to address in order to comply with our obligation for safe, reliable service, yes.

Q Uh-huh.

A (Freeman) But that also includes projects that we initiated before the LCIRP, which are in process.

Q And, if each of these elements, you know, the

statute says "assessment of plan integration", I'm looking at V, VI, and VII. So, if each individual project was not evaluated or assessed, I should use the term "assess", against these three final elements of the statute collectively, explain how you assessed each of these grouped?

A (Freeman) Well, so, each of those projects will be assessed individually. And the compliance with V and VI, and maybe VII, I think, are the subject of the supplemental filing from October of 2022, which I think is Exhibit 8.

Q Okay.

A (Freeman) Where we describe that the Company, when we look at environmental impacts, --

Q Uh-huh.

A (Freeman) -- we do this on a project-by-project basis. And we have developed a matrix that includes not only looking at the costs of the projects, and the reliability of each project, we're looking at the environmental impacts.

Q Uh-huh.

A (Freeman) And that is done by another, the Environmental group within Eversource, that, for each project, identifies whether there are

wetlands impacts or whether there are other environmental issues. And then, that goes -- that is documented in a matrix, which was also provided along with Attachment 8 **[**Exhibit 8**?]**, as -- in our appendix, an evaluation matrix that shows how that applies to the Resistance Substation project, for example.

And, so, those are how some of those externalities are taken into account.

Q So, just let's map those Exhibit 3 projects to that matrix, if you would please? What Bates page is the matrix on in Exhibit 8?

A (Freeman) Bates Page -- sorry, give me one second.

Q Take your time.

A (Freeman) 140.

Q Okay.

A (Freeman) So, on that Page 140, you see the matrix, which scores the substation based on a number of -- scores the substation project based on a number of weighted attributes. Whether the project meets the distribution planning guidelines?

Q Uh-huh.

A (Freeman) Whether there are -- how many megawatts are at risk? And, if you scroll down, you see there's impact of "Headroom Capacity", "Distribution System Loss". And halfway or so down the page, there's "Constructability" and "Environmental Impact", which are two of the really important elements, whether the substation can be constructed, whether there's enough physical space, and whether there is environmental impact, that would impact the construction of the project eventually.

Q Are these the same projects that are in Exhibit 3?

A (Freeman) No. This is a project that was further along. It's a more recent project. We provided this as an example of the matrix that we're using now.

At the time -- at the time this LCIRP snapshot was taken in 2020, we were not using this matrix. We have since then evolved our process. And any project that we present to the SDC going forward would go through this evaluation criteria.

Q So, these projects were not in your original

LCIRP, as filed?
A (Freeman) The ones on the list that you are talking about?
Q In this Exhibit 8.
A (Freeman) Oh, in this exhibit, right. This project, this Resistance project was not in the original LCIRP, correct.
Q Okay.
A (Freeman) Yes. But it's provided as an example of the more rigorous analysis of our environmental impact.
Q So, this is -- this is for one project, correct?
A (Freeman) Correct.
Q And what project is that?
A (Freeman) The Resistance project, Resistance Substation upgrade.
Q Okay. But, at the time, you did not apply this evaluation?
A (Freeman) At the time --
Q When you originally filed?
A (Freeman) When we originally filed, this evaluation was not in place. It was --
Q When you filed this update, why didn't you perform this analysis against the projects that

you had included in your original LCIRP?
A (Freeman) The supplemental that was filed in October?
Q Yes.
A (Freeman) Because the purpose of the supplemental filing was to explain how the Company takes into account the compliance element, I think it's 7 **[**VII**?]**, and how that -- how the project-by-project analysis complies with that requirement in 378:38.

We do understand that the projects that are listed in the LCIRP, they would go through the evaluation process. And, as they go through, they would be subject to this evaluation criteria. But we haven't done that evaluation for all of those projects. And we did not have it available for the supplemental.
Q Okay.
A (Freeman) And that was not the reason for the supplemental filing.
Q All right. So, I'm just looking back at Exhibit 3, Bates 092, the '24 and '25 projects, South Milford, White Lake, and the Cocheco Street Substation. For those projects, have you applied

that type of environmental analysis against them?
A (Cosgro) So, for Monadnock, that project has progressed past the point where we would do this design -- this decision matrix.
Q Because it's -- is it in service?
A (Cosgro) It's going to be starting construction fairly soon. So, just the maturity of the project itself, it's reached the point where we would not go back and do that analysis.
Q What about Emerald Street?
A (Cosgro) That project is in service. Which list are you referencing at the moment?
Q I'm looking at Exhibit 3, Bates 091 and 092.
A (Cosgro) Okay.
Q My understanding is that this is the list of projects that your load forecast identified as necessary?
A (Cosgro) Correct.
Q Okay.
A (Cosgro) So, at the time of the LCIRP filing, yes, these needs were identified.
Q Yes. And you're pursuing several of them still?
A (Cosgro) Yes.
Q Okay. I guess I was just asking, when you filed

your supplement, and you were addressing what the Company said had been a gap in your initial submission of an analysis of environmental impact, why you elected not to perform that evaluation against the future projects in your identification?

A (Cosgro) If it's for a future project, the study has not progressed to the point where we would be doing that evaluation yet.

Q Okay. So, when would you apply the evaluation?

A (Cosgro) When we're comparing our design alternatives.

Q I guess I'm lost. If you can't apply it to future projects, when would you apply it?

A (Cosgro) During the study process of that particular design violation of need. So, after we identify the needs, we then do a localized study on that particular design violation system need. And, when we do that singular study on that location, that's when we look at the alternatives, we look at the environmental impact of those alternatives. And we look at the non-wires solution as part of the suite of, you know, solution alternatives for that, that system

need.

Q So, what was the Company trying to communicate in your supplemental testimony?

A (Freeman) The Company was trying to communicate that we do consider environmental, even though our prior matrix, and there was a prior process that documented solution alternatives, and it did not explicitly include a section for environmental impact.

But the Company wanted to communicate a couple of things. One, that we do always look at the environmental impact as part of the assessment of alternatives. It's part of the constructability review. It's part of the -- when we look at -- when we do a walk-down of the site, --

Q Uh-huh.

A (Freeman) -- we always look at whether there is an environmental issue. It just wasn't documented in the matrix of the selection of alternatives, and that matrix has since then been revised.

We also wanted to communicate that environmental compliance is taken into account in

the way we design our system to accommodate distributed energy resource projects. Those are important for meeting the state's clean energy goals. We have integrated 435 megawatts of DER since we are started doing this. And every year we are seeing an acceleration of DER projects.

If we don't design our systems with that in mind, we would be doing our customers a disservice, but we would also be slowing down the meeting of the state's clean energy goals, which is part of the environmental impact that we are trying to support. And, so, those two things we wanted to bring out in the supplemental filing.

I do understand your question. And the question is, for clarity, Mr. Cosgro, is that, when we look at those projects on Bates 091, how many of those projects would be subject to that new, more rigorous matrix that includes environmental impact? And, if we had done it, why didn't we submit any of them with the supplemental filing? And I suspect the answer is, we haven't planned to do those projects at this point.

Some of them have progressed beyond the

point, including White Lake. And then, some of them are not at that point yet.

Q So, like Cocheco, that's in here, it says it was planned for '25, well, in-service date of December '24. When does that get to the point where it no longer would, by your standards, meet a need to go through that environmental analysis?

A (Cosgro) So, presently, the Cocheco Street or Dover Substation project is still under its alternatives review. And it's having its environmental impacts studied with that alternative review.

Q It just isn't here, in front of us, in these exhibits?

A (Cosgro) Correct. At the time of the LCIRP filing, it was not at that stage.

CMSR. SIMPSON: Okay. In the interest of time, I think I'm going to yield the floor to my colleagues. It's getting late in the day.

Thank you for the clarifications. No further questions at this time, Mr. Chairman.

CHAIRMAN GOLDNER: Commissioner Chattopadhyay.

CMSR. CHATTOPADHYAY: It's been a long

day.

So, the first thing I will point out is, you know, a docket going on for such a long time, it's kind of painful. But I'm happy to hear that I, and at least one of the witnesses, is, you know, in the same boat, in terms of being able to say "In 2020, I wasn't there." So, that is a good situation.

On the other hand, I'm surrounded by engineers here. And I don't feel very safe.

[Laughter.]

BY CMSR. CHATTOPADHYAY:

Q So, let's just go to the topic that we were right now on. So for example, Bates Page 091, I think it's Exhibit 3, the "Cocheco Street (Dover) Substation Transformer Upgrade", says "The existing Substation transformers TB22 and TB55", I won't read everything, "will be replaced with two 62.5 MVA transformers." So, you've already decided what you're going to do it with, right?

A (Cosgro) At this point in the ten-year study, the study has provided a suggestion. It utilizes that solution to then carry on with the continuation of the ten-year analysis. But that

solution is technically not final. It actually has to go through the capital budget process, which is going through the solution alternative development, going through an NWA screening and solution alternatives development, and then it goes to the Solution Design Committee. And that's, ultimately, where the final decision of what the final project or solution to meet the need is determined.

Q So, just give me a sense of how the LCIRP works? You identify needs. Then, you look for solutions. So, you look for different solutions. The LCIRP is providing a snapshot of the different solutions that are possibly going to be, you know, in the fray, and then you choose one?

A (Freeman) I would say the LCIRP documents our process, and the results are for studies. It also documents the results of the search for solutions, which would be the SSF forms that we submit to the Solution Design Committee. And documents the ultimate solution that's selected, if the project is at that stage.

So, the intent is to provide all of the

information that, where you can trace from the forecasts, to the violation, to the alternatives of a solution, to the preferred. Unfortunately, it's in different exhibits. Yes, lesson learned. It could be much more organized.

Q So, when you say "planned projects", and I'm looking at Bates Page 091, --

A (Freeman) Yes.

Q It's still -- it's not given that they will be built, right? Or, should I read it as "these projects are going to be there definitely"?

A (Freeman) So, basically, 091 identifies a need. So, there's a need that has to be met, and that need is a violation of planning criteria. In this case, Cocheco is a need to provide more capacity.

The presumptive solution is that we upgrade the transformers. But, as Mr. Cosgro said, that doesn't have to be the final solution. Because we go through a process where we have to look at alternatives, and document why we prefer the alternative of upgrading the transformers.

Q Okay. So, anybody who is in the panel is free to respond to the other questions that I'm going to

ask. And you will know who is an expert on it.

So, let's begin with one question I have is in the forecasting. So, you have -- I understand what was being described. The forecast currently sort of includes all of the measures, like energy efficiency, behind-the-meter, you know, like solar photovoltaics and all that, they're all included. So, you are just taking the load, and then you're doing a forecasting. When you talk about incrementally adding the elements that I just talked about, it's the ones that are truly incremental, meaning that they're not in the mix yet, that's what you were describing.

A (Walker) That's correct.

Q Can you give me a sense of, when you're trying to measure how some of those elements are on their own going to increase, because that's why you have a trend in everything, so, you might have a trend in energy efficiency on its own, how is that modeled?

A (Walker) Sure. We can do that. So, let's take two examples. We'll take energy efficiency, because you specifically had mentioned it, and

I'll take ground-mounted solar as another topic.

So, when we -- when, and I'm going to start with the ground-mounted solar side, so, when we model the solar forecast component of the station forecasts, what happens is it is a combination of top-down and bottom-up forecast modeling, meaning we will look at projections from the New England ISO, we look at our historic trends of adoption in the state.

And then, starting now, what I mentioned in the morning, we have a tool called "GridTwin", which let's us look at every single piece of property in the State of New Hampshire, and basically rank that on an economic rate of return for potential projects. That will include, you know, projected interconnection costs, size, cost of the property, what does it cost to develop, and then rank those.

So, if we are at the state level, from looking at the ISO data, have a projection there that says, I'm going to take a random number, it's 100 megawatts next year, then the parcel data will help us inform where we are going to put those 100 megawatts on each station. That's

ground-mounted solar.

Rooftop solar, slightly different, but we're not looking at properties, we're looking at where people have roofs, they will show up in different areas. Where there's a lot of roofs, typically, no ground-mounted shows up, and vice versa.

For the energy efficiency, there's two components to energy efficiency. There's the naturally occurring energy efficiency, and then there's the one we incentivize through our program. The naturally occurring one is what we capture in our econometric model, right? So, that looks at the last ten years of peak load. And, if that peak load, for example, has stayed flat, while we had an economic growth, there might be several reasons why that's that way. It might be because a lot of people put rooftop solar in place. That might drive down the peak. It might be that a lot of people, you know, did their own energy efficiency measures, swapping out the light bulbs, new HVAC systems.

We, without -- we don't precisely know what's happening in each of those customer

levels, we only see the aggregate results. So, our forecast will automatically bake that rooftop solar, that energy efficiency into it, because we'll see, for example, a 2 percent economic growth, with a flat substation load. So, if we continue forecasting 2 percent growth, we'll assume it's a flat substation load, even though the load might be growing, you know, people put more solar on the roof and will do more of their own energy efficiency.

Then, on top of that flat forecast, we say "Well, we have an energy efficiency program with X millions of dollars. We are expected to do this much load reduction across the territory", and we break that done, as discussed in the morning, by station. Now, that gets subtracted out of that forecast. So, what was a flat forecast might now be trending down, because there is another program on top of it that reduces that.

And now, comes the third thing is, when we do the solution evaluation, as outlined before the break, we will look at that resulting profile. And we will evaluate what

happens if we do a geo-targeted energy efficiency right on top of that. Same thing could go for rooftop solar/ground-mounted solar solutions, *et cetera*.

So, that's kind of how that works. I know that -- does that answer the question?

Q Yes. But, really, so, there is -- you take a look at those individually, for the naturally occurring, for example, you know, energy efficiency, it is based on some data, historical data, or not?

A (Walker) Well, like I said, it is based on the historical peaks, which will show that naturally occurring energy efficiency. We don't have the ability to splice out what each individual customer is doing. And, so, if --

Q Let me just -- let me clarify where I'm trying to go. So, you have three or four different kinds of, you know, for example, we talked about energy efficiency, we can also talk about electric vehicle load, okay, all of that. Do you have enough visibility as to how those can be behaving differently, and how that might impact things in the future? That was my intent.

A (Walker) When you --
Q So, do you rely on some data from somewhere? Or, are you simply, like you described, I'm just looking at overall what's going on, and let's see, just draw a line, okay, to an ordinary least square regression, figure out how things are going to progress, then let's worry about adjusting for the utility's additional energy efficiency programs, as well as what you might consider NWA otherwise.
A (Walker) Uh-huh.
Q So, that was my question. Do you have enough visibility into different components at this stage?
A (Walker) So, and it depends on the components, right? So, we know where rooftop solar is going. That goes right into our interconnection process. So, we're fairly familiar with that data. We know where ground-mounted solar is going, we're very familiar with that data.

Energy efficiency, again, I do not know who is screwing out which light bulb, and putting in a new one. That I don't have the visibility. That is a linear regression model, but that's

different.

So, it depends a bit on the technology we're looking at here, and just in terms of what data do we have access.

Electric vehicles is, again, very interesting question. Right now, we don't have access to RMV *[sic]* databases to see where electric vehicles are going, for example. So, we have to use different models to estimates that.

Rooftop solar, again, we control that process. We have the data.

CMSR. CHATTOPADHYAY: Okay. I'll try to make it easier for you, Chair Goldner. So, I'm just trying to stick with fewer questions than I originally planned.

BY CMSR. CHATTOPADHYAY:

Q Do you have visibility on distributed storage opportunities?

A (Walker) Can you clarify, "distributed storage" is -- what are you looking at, large-scale systems or that behind-the-meter?

Q Yes. Let's talk about both of them.

A (Walker) So, I would like to defer to Mr. Moawad. We get interconnection requests for both large

and small-scale storage, right?
A (Moawad) Correct. We mainly get --
WITNESS MOAWAD: Sorry. Can you guys hear me?
CMSR. CHATTOPADHYAY: Yes.
WITNESS MOAWAD: Sorry.
CONTINUED BY THE WITNESS:
A (Moawad) So, we do get quite a few interconnection requests for small storage systems, 100 kilowatt and less. We do not have interconnection requests for large storage systems, at least volumewise, we don't have a lot. We may have a few that's currently in process. But we have not had a lot of those larger systems greater than 100 kilowatt.
BY CMSR. CHATTOPADHYAY:
Q Are you just talking about New Hampshire or are you talking about your other jurisdictions as well?
A (Moawad) No. This is specifically for New Hampshire.
A (Walker) And the other jurisdictions have seen a significant uptick in large-scale storage development. And, to clarify, we see all of the

interconnections. It's just a question of how many interconnections are being requested. And that's, on the large-scale solar -- storage, just not that much yet.

A (Moawad) Correct.

Q So, let's go to Exhibit 1, and Bates Page 050. Sort of a general question, but I want to get a sense. Let me know when you're there.

A (Walker) Uh-huh. I'm there.

Q Okay. So, at the end of that, at the end of the page, there is a discussion about "Eversource developed a list of potential NWS solution candidates that was shared with the Staff and the OCA in August 2020." Okay. Is that part of the record?

A (Walker) I would have to defer to my colleagues. As you mentioned, and I, clearly, that was before my time.

A (Freeman) I believe that is in the record. If you give me a second, Commissioner, we will try to find the reference to that list.

WITNESS FREEMAN: May we confer? Is that okay?

CMSR. CHATTOPADHYAY: Absolutely.

WITNESS FREEMAN: Okay.

[Witnesses conferring.]

CONTINUED BY THE WITNESS:

A (Freeman) So, Commissioner, we conferred, and we believe, subject to check, that the list was not included. We did -- the list did settle on Loudon as the location that met all the criteria that we had agreed to. And that I do have a list that shows Loudon at the top.

But I don't believe that the actual list of all the stations was submitted into the record.

BY CMSR. CHATTOPADHYAY:

Q And I understand that this docket is going on for a long time. So, when you say, later in that page, "Given the additional discovery from the Staff, and other considerations pertaining to the NWS candidates, as of the date of this submission, the Company, Staff and OCA have not yet identified the candidate that would be the focus of the more detailed analysis." When you talk about "Loudon", is that the identified candidate?

A (Freeman) That is the identified candidate,

Commissioner.
A (Walker) Yes. And the report that we did with the detailed study in Loudon is in Exhibit 3, Appendix 2-A.
Q Okay. Just out of curiosity, if you go to Exhibit 2, Bates Page 108, let me know when you're there.
A (Walker) This is for -- I'm sorry, exhibit?
Q Exhibit 2.
A (Walker) Okay. Okay.
Q What is "ENTS"? "The ENTS builds its screening process." And, again, I'm --
A (Walker) Oh. I think that was a very old abbreviation for the Eversource non-wires screening tool set.
Q Okay.
A (Walker) "Eversource Non-wires screening", and then "Tool Set".
Q Okay.
A (Walker) So, I think that has since been dropped out of this. That was an old abbreviation we used.
Q So, let's -- please confirm that I understand this correct. So, if you have more than two

years to deal with an exigent situation, I mean, more than two years is probably not exigent, but assume it is, that's when you can actually take care of -- you can look at an NWA, right? Just, you know, I'm just trying to get it intuitively. But, if it's less than two years, you --

A (Walker) Are you referring to a specific cite on the page here?

Q No. But this was just on the ENTS. But I'm just --

A (Walker) Yes. So, --

Q I think that is discussed somewhere, so just bear with me, I think.

A (Walker) So, -- yes. So, --

Q I'm talking about the criteria.

A (Walker) So, as I've mentioned in the beginning of today, our original criteria were for three years.

Q Three years.

A (Walker) Three years, $3 million, and not related to asset health or asset condition. Now, again, as I said -- I have agreed to take that down to two years as an evaluation, and as well go down from three years to $1 million and -- $3 million

to $1 million, and include asset health by a case-by-case basis.

Q Yes. The number, generally, is not the focus for me. What I'm trying to understand is, typically, as you were doing it until now, which is you said "three years".

A (Walker) Uh-huh.

Q When will you look at other solutions? Let me put it differently. When you find some issues, when you're trying to plan into the future, do you usually get anything beyond three years?

A (Walker) Yes. So, typically, these are the larger substation projects, all right. Substation upgrades that are required due to forecasted capacity issues. And that's why we do forecasts ten years out.

And perhaps a bit of context here. And, so, our substation projects take a long time to plan, permit, and build. That's a multiyear process. That's why we forecast and that's why we plan. And, pardon me, but, if we could, you know, snap our fingers and a substation is there, we wouldn't need forecasting, because we could build instantaneously. For the distribution

side, feeders, that horizon is smaller, because it's much easier to point than a large substation.

So, when we talk about that three-year limit, essentially, that focuses the NWA effort on the large and expensive capital projects -- I'm sorry, substations. Based on our experience, experience across the country, those are the projects that have the highest probability of succeeding as an NWA. And you have something that's a very expensive station upgrade, because, otherwise, alternative solutions do cost money. Developing a battery storage or an energy efficiency program comes with upfront costs, and, for most of those solutions, it comes with --

[Court reporter interruption.]

CONTINUED BY THE WITNESS:

A (Walker) -- running costs, that are significantly above what a traditional solution is like. So, you have to be deferring a very expensive traditional solution.

And, to avoid the unnecessary overhead of, basically, going through every $100,000 project, doing an NWA comparison, full well

knowing that a deferral value of $100,000 is $20,000 maybe, we're not going to do an NWA project for that amount of money, that isn't going to fly. And we are much faster deploying the traditional solution and much more cost-effective. That's why that cutoff exists.

And, again, our original number was "three years", but we've agreed to take a look at the two years, to see how many more projects would be then included. And, of those number of projects, call them X, included, how many of those pass the screening positive, and then make a decision on the viability of that move.

So, to put this in a bit of context, say, 100 additional projects are included, and we spend two man-days, each one, so we spend 200 man-days evaluating that, that's an engineer full-time a whole year, and one of them comes to fruition. Now, you have to figure is that worth the investment or not. But, if 40 come to fruition, and the deferred value that was captured is in the tens of millions, good. And we will move the limit up.

BY CMSR. CHATTOPADHYAY:

Q Going to Exhibit 16, this is the Department of Energy's testimony, I mean, you don't need to necessarily go there, I'm just trying to -- there was a mention in the testimony that "CVR has yet to be implemented in New Hampshire."

Can you give me a sense of whether you are pursuing CVR in New Hampshire at all? And also give me a sense of what is going on in the other states that Eversource is in?

A (Walker) Yes. So, --

A (Freeman) I'll speak to New Hampshire here, and then I'll let Mr. Walker speak to the other states.

So, this goes back to the question that Attorney Kreis had asked about grid modernization. And we consider VVO, Volt-Var Optimization, to be one of those key grid modernization projects that would be accelerated, and allow us to adopt quickly with a grid modernization program. And this is how it was done in Massachusetts, which Mr. Walker will speak about.

We do understand that we have a duty to modernize the system. We are not standing still.

We are trying to rate base as many grid mod. programs as we can within the confines of the budget. So, that is how we were able to do DMS in Massachusetts. That was how we were able to do PowerClerk, that is how we were able to get Synergy in Massachusetts.

VVO is one of those things that we are looking at. It requires the communication infrastructure, it requires the intelligence, it requires us to deploy a significant amount of capacitors, upgrade regulators, upgrade the LDC controls, and be able to tie them all back into central server, so we can flatten the voltage and drop it down through VVO.

You know this. I'm just kind of describing it for the layperson. We would love to do that in New Hampshire. But, to the extent that we can fit that into the rate base is something that we can consider. But, given the grid modernization program, we can accelerate adoption of these technologies much faster.

With respect to the other states, Mr. Walker.

A (Walker) I can basically speak, for example, in

Massachusetts. VVO and, by extension, CVR, is part of the grid modernization program and being deployed at key stations. With everything that Mr. Freeman said, VVO and CVR, not to confuse it, but, essentially, based on the same technology, you need to have a VVO scheme in place to conduct CVR. CVR is another objective function of VVO. So, yes.

Q Go ahead.

A (Johnson) I just want to correct, Mr. Freeman just misspoke slightly when he talked about DMS. We're doing DMS in New Hampshire. And, really, for the reliability benefits of doing a Distribution Management System, which allows for a more automated response of your distributed automation. We're not requiring a dispatcher to interact. So, that's actually in the process of being implemented right now.

And also, we've continued with a certain level of deployment of, you know, DSCADA devices, pole-top automated devices, some level of replacement of old electromechanical relays with numerical, but, you know, at a very limited pace, because of the funding that's available.

Just, again, we are doing what we can, really, to put the base infrastructure in place upon which some of these other technologies require. I mean, you need to have, for example, all those electromechanicals replaced with numericals, in order to be able to do, you know, VVO and those types of things effectively.

Q So, some of them will be used soon?

A (Johnson) Well, we use, not for VVO or conservation voltage, but, I mean, for example, numerical relays, you know, they provide us greater flexibility, as far as settings for protection schemes. They allow us to interrogate those devices at the time that we have an event to locate fault locations. And we're using them in DMS, both to identify, at some point, fault locations, but also to automatically, you know, do switching to self-heal the system. Right now it's in an advisory mode. But, yes.

Q But those same systems can be used to reduce load in the future?

A (Johnson) Right.

Q Okay.

A (Johnson) They would be part of a VVO system,

because you need that intelligence.

CMSR. CHATTOPADHYAY: Yes. I think that's all I have. And, Chairman Goldner, you are eager to go. So, let's start.

CHAIRMAN GOLDNER: Okay. So, we probably won't get all the way through Commissioner questions today. So, we should plan tomorrow on the -- I will have some questions before we run out of time. But the Eversource witnesses should plan on coming back tomorrow morning. And we'll begin again with Commissioner questions. I don't think it will take long tomorrow, and then we'll move to redirect with Attorney Ralston. So, just to set expectations.

So, I'll ask some questions, and we'll see how far we get, and then -- but we'll adjourn sometime between 4:30 and 4:45.

Okay. So, I'll start with, you know, this should have been the perfect time to have an LCIRP review. It's actually the inverse, Attorney Kreis, no offense, of what Attorney Kreis said. What I mean by that is that, this was set in 2020. The Company could have come in here today and shown us, "Hey, we got these

programs, we've executed these programs. Look, one fell off the end of the bus or the end of the ship, but everything else was executed, and look how smoothly we executed." And, you know, honestly, I'm not getting that feeling today.

So, it was a great chance to build credibility in the forecasting process. And I'll just say I think the Company fell a little short.

So, with that -- with that, I'll kind of start into some questions.

BY CHAIRMAN GOLDNER:

Q You know, I wonder -- I wonder, when you present to your president, what do you show him? I don't think you show him a thousand pages of details, right? And, to be fair, you know, the Commission asked you for a lot of detail. So, you supplied what the Commission asked for.

But, when you present to your president, I assume, when he's approving a plan, you know, there's some executives that go in, they present to him. There's, you know, 15, 20, 30 pages of slides, he reviews your, you know, LCIRP, for lack of a better description. I also assume that he wants to know what that turns

into, your capital plan. How much, what does this mean for us from a rate base, from a capital plan, from an overhead expense? You look at the whole picture.

So, my first question is, what are you showing your executive management? And why doesn't the Commission and the Parties see something similar?

A (Johnson) I'll take that one. And the timing is appropriate, because we're approaching the time of year right now where we create our long-range plan, which is five-year plan.

As far as what is presented to the president, each of the areas of, whether it's asset management, load growth, system planning, you know, all of those departments, you know, produce what they anticipate the need is over the next five years, including grid mod., including all of those various elements.

And this is the time right now where we meet regularly and meld that into the five-year plan. And, you know, admittedly, you know, the system planning items are easier to forecast out into the later years, because of the lead time

that you need on the distribution line side, because they're such shorter term, we tend to be quite specific in the very first year, the second year, but beyond that, it's, frankly, it's a more plugged-in approach. But identifying the needs, and you don't exactly what your needs are going to be for --

[Court reporter interruption.]

WITNESS JOHNSON: I'm sorry, I'm talking way too fast. Sorry.

CONTINUED BY THE WITNESS:

A (Johnson) We don't know, at the distribution line, because it is such a localized issue, with a URD development going in, you know, a commercial customer going in, or coming off the system, can drastically drive what we need to do there.

And, also, looking at reliability, every year we have a new worst-performing circuit list that is driving what we develop for solutions to address those circuits that are performing poorly.

So, those are all elements that come into and determine what we propose for the

upcoming year.

BY CHAIRMAN GOLDNER:

Q What does your executive suite see, though, when you're presenting to them? I assume that it may be the VPs go in, or maybe at the director level, there's presentations to the president, and you're going through what you're going to present to the parties and the Commission, and you're getting alignment. What does that look like? I assume your president is looking at pretty high-level data?

A (Johnson) Yes. Initially, it's very high-level. Throughout the year, though, as we move forward with the Plan, and we get into the fall and actually establish the following year's capital budget, it's at that point that projects are going through the approval processes. And they have talked quite a bit about substation projects going through the Solution Design Committee, and going through EPAC.

For the distribution line projects, it's a state-level body called the "New Hampshire Project Approval Committee", which I chair. But, again, it's all the directors and managers in New

Hampshire. And, with us, they come in for initial filing, and, typically, a full funding Project Authorization Form. But each of those forms goes to the president. And, in fact, depending on the dollar level for delegation of authority, require his sign-off in our -- in Power Plan, which is the delegation of authority system that's --

Q He probably sees everything above a million or something?

A (Johnson) For him, it's -- I want to say it's -- I think it's 3 million.

Q Three million, okay.

A (Johnson) Right.

Q And who has like a million authority? Like, how does that work within your system?

A (Johnson) So, I think I have up to 500,000.

Q Okay.

A (Johnson) And then, from there, it really jumps for his approval.

Q Okay.

A (Johnson) And, above that, it actually has to go to the Chief Operating Officer of Eversource to --

Q So, you have five -- I'm sorry. You have 500, the president has 3 million. And then, above that, it goes to somebody at Eversource corporate?

A (Johnson) Yes.

Q Okay. Okay. That makes sense. So, my encouragement for future LCIRPs is to really assume that the Commission is like your -- you know, you're presenting to the same sort of -- in the same sort of way, where, you know, you're painting with a broad stroke, at a high level. And then, yes, all the details are necessary, we require a lot of the details; totally understand that. But, really, start with a higher level.

I know a lot of the people in this room weren't associated with the original draft. But, you know, frankly, it's pretty weak.

Okay. So, one of the other things I was expecting to see, this was based on prior orders, was a capital plan spend by year. Now, I did find one in Mr. Dudley's testimony, but not in the Eversource testimony. So, that's kind of weird.

But I'm hoping you can kind of walk me

through your view of the five-year capital plan, and how that relates to the forecast? Which I'm looking at on Bates 016, Exhibit 1. And kind of help me understand, big picture, what's happening here.

And what I'm looking at -- sorry, Mr. Patnaude, I'll slow down. What I'm looking at is a load forecast that we've spent a lot of time talking about today, that's going up at about 0.4 percent per year, and a capital plan that's going up at something like 3 and a half percent per year, or 3 percent per year. Those are quite different. And I'm just trying to grasp what's going on in the Company? Why isn't the forecast that we spent a lot time talking about more in line with your capital plan?

A (Johnson) If I can, I'll start, and others can add, if they would like.

But it's actually a relatively small percentage of our capital plan that is load-driven.

Q It looks like it's mostly reliability, right?

A (Johnson) Well, actually, most of it is nondiscretionary, you know, service to new

customers, obsolescence, in other words, outage response, work for New Hampshire DOT, some third party work that's non-reimbursable. There are lots of annuals.

I mean, for example, just the transformer annual, to buy and pre-capitalize overhead transformers is on the order of 14 million. New service annual is anywhere between 15 and 20 million. So, I mean, those annual buckets eat up a lot of it.

And, then, yes, reliability, and within that reliability, that includes reliability for projects, which include asset condition in right-of-way, street-side, and substation projects in there.

Q It makes sense. And I'm looking at Bates 111 of Mr. Dudley and Mr. Willoughby's testimony, and I know it's not your testimony, but it's an Eversource slide. 111 -- or, Exhibit 17, sorry.

And it's a really nice slide that shows your capital forecast. And this is where I had the idea that reliability was the primary driver, because, if you look at that chart, it's the biggest portion of the chart.

And I won't talk about the numbers, because it's confidential. But I'm just trying to get a handle on, you know, you've got about -- let me ask you this. Is your total capital number a confidential number? I'm looking at the confidential sheet.

CHAIRMAN GOLDNER: Do you know if that's confidential, Attorney Ralston? I'm looking at Exhibit 17. And I'm looking at Bates Page 135. I'm moving on you a little bit here.

MS. RALSTON: And which number are you asking about?

CHAIRMAN GOLDNER: I am asking about your "Net Utility Plant Number, on Line 3 of 135 of Exhibit 17. I don't think it is, but I'm not sure.

MS. RALSTON: I don't -- I don't think so.

CHAIRMAN GOLDNER: Okay.

BY CHAIRMAN GOLDNER:

Q So, your net utility plant number was about 1.7 billion, and it shows it growing to about 2 billion, on a relatively flat customer base, a relatively flat load. And, so, you know, just

it's -- in a capital-intensive business, which is where I come from as well, you know, usually you've got massive depreciation roll-off, you're replacing that depreciation roll-off with new investment. And, if you have a flat customer base, in a lot of businesses, you're driving to a pretty flat what you would call here a "net utility plant".

So, I'm just trying to understand, in the big picture, what's really driving this growth? And, to me, this is a big portion of the value of an LCIRP process, like, big picture, what's going on. You have plans for the future. You share that with the parties and with the Commission, and we get our heads around kind of what you're trying to do. So that, when you come in for a rate case, it's not, you know, DEFCON 1.

So, that's what I'm trying to get my head around. And maybe somebody can share the Company's philosophy or thinking with respect to net utility plant and the customer base, and even the load being flat. We talked a little bit before, I think, Dr. Walker, you mentioned in the next 20 or 30 years there will be a significant

increase in the electrical load. And, you know, that's probably true. But, in the next nine years, according to your own forecast, it's pretty flat.

A (Johnson) So, if I may, a few, a couple of things.

Number one, there's a time in our history, as I think you know, that we spent very, very little, because of certain things that were going on in our capital investment, was hardly anything into the system. And, so, for the last, probably, 15 years, we have been investing heavily, to catch up with some very aging infrastructure. We still have, you know, our lines in right-of-way are typically 1935/1940 vintage. So, there's a lot of investment going there. A lot of our non-bulk substations are 1950 vintage. So, yes, there's been a lot of investment due to -- due to that.

There's also been, as you know, as part of REP, back in 2010 through 2000 whatever, you know, we started with a $10 million Reliability Enhancement Program, it got bumped up to $40 million dollars to address things, because our

reliability was getting progressively worse for many years, and that additional spending has helped us to turn the tide. So, you know, as far as -- that's a little bit of the history of how wide the increase has been.

Let me talk briefly about load growth. It is true that, when you look across and you aggregate the entire load within New Hampshire, it's relatively flat. With that said, there are still pockets of growth. And not just that address higher-level issues, such as bulk stations, but, locally, I can tell you that a lot of our system is spent beyond step transformers, where, as we built out the system, we took a 34.5 out and then we put in step transformers to feed the older, lower voltage areas. You know, we are seeing tremendous growth out beyond those areas. And, so, especially this past year, which isn't even included in here, but we had a couple summers of hot weather. You had the COVID situation, you had a lot more work from home. We've seen significant growth beyond our step transformers, and which result in a significant number of projects to have to -- to address that.

So, while at the global level, load growth is relatively flat. There are certainly pockets where there is significant growth. And there's growth within, if you've been to Portsmouth, you see it; if you go out to Pease, you see it. There are pockets of continued growth. It's just not -- it's just not everywhere.

And the other thing I'll just add, just anecdotally, we used to put in a 25 kVA to feed three decent-size homes. My home is fed, there's three homes my size that are fed by a single 25 kVA. We're having to put in 50 kVAs for single houses today. And you would be amazed the number of four or 5,000-foot -- square foot houses, with two EV chargers in it, with, you know, tons of central air.

So, anyway, my point is, there are pockets that require investment by the Company to address that growth piece of it.

Q And that's the -- I'm sorry. And that's the benefit of an LCIRP plan, is that, if you need to ramp up something for what sound like good reasons, it's going to roll over at some point,

at some point you're going to be "Ah, yes, we're caught up." And then, the Commission and the parties can see, you know, "Yes, okay, we need three or four more years of growth", and then it rolls off and everything levels out.

That's, again, the benefit of helping -- bringing everyone up to speed. So, I think, for the future, that would be something important to recognize.

And then, when forecasting capital, you do have some cuts in here, again, it's in Mr. Dudley's testimony, not Eversource testimony. So, I would encourage it to be in your own testimony moving forward. But, you know, different cuts of data that are sort of obvious. You know, for example, if you're trying to help people understand what you're investing in grid mod. -- or, smart grid, rather, you have an enhanced system visibility, you'd have automation technologies, you could have optimization technologies. You'd have those broken out, so people can see "Oh, okay. This is what Eversource is doing to help come up to speed in this particular area."

So, that kind of visibility, just simple tables, simple graphs, like what was in Mr. Dudley's testimony, extremely helpful to bring people up to speed. I don't mean to beat that dead horse, but just referring to it.

A (Johnson) No, no, no. If I may, that, what he submitted was the long-range plan from our -- that we produced.

Q Right. Right. It was just kind of odd that it was in his testimony, and not Eversource's. But I'm glad it's in there. So, in the end, we have what we need.

But, you know, my encouragement would be, and, you know, maybe even in this docket, we'll see, about giving the parties and the Commission a cut of data that's helpful, and helps explain what the Company is trying to accomplish.

This question I think might have been asked earlier, but I didn't -- I'm not sure I followed the answer. So, relative to various DER implementations, for example, hooking up a residential solar array, do you have discrete, you know, cost-benefit analysis? So, "Okay, we

have a residential array. We know it's going to cost this much to set it up. The benefits look like this." Is there -- do you have a discrete analysis that shows what happens with each DER?

A (Walker) So, in terms of the forecast, is what you're asking?

Q Yes. Yes. Yes.

A (Walker) So, going forward, and this will then be fully included in the next LCIRP, we are building, and we can go into more details on the forecast here, what's called "adoption rate" or "adoption propensity" models. And they will look at the economics of rooftop solar for customers. That will include cost of equipment, cost of installation, of course, those will be average numbers for the state, that will include average cost of energy. And then, we will look at consumption values for the customers, and basically create an understanding of -- we will basically sort the customers by type or class, going way more detailed than "residential" and "commercial", you know, defining different types of behavior, is it a single-family/multi-family home, there's a low/high/medium consumption, X,

Y, Z. And then, build, basically, a rate of return model for them.

And the idea is to say, if 100 megawatts of solar are interconnected a year, where do they go? And the obvious choice would be to, in our model, would be to say "well, we will take the customers with the fastest rate of return on the rate of investment." Is that two or three years, as opposed to the one that has five years or six years?

So, that's how we would go about it. And, yes, so that would be -- it's being modeled, and we're rolling that out to New Hampshire this or next year to have that ability.

Q Okay. Very good. And I think, you know, a one-pager on those kinds of things, very helpful, right? "Here's the benefit. Here's the cost. Here's how it looks to Eversource." Helping people understand what it is or how you're looking at it. I know there are three or four cuts in there. So, maybe it's a three or four-pager. But you know what I mean, something high level.

All the detail, it's fine, put them on

Page 1004. But, you know, give us kind of a high-level view, please, in the next time around, so we can understand what you're doing. Because that analysis is great, that's just what we want to see.

A (Walker) Yes. And it's not a three or four-pager, that is correct. But, in Exhibit 1, under Chapter 5.1, we do outline what we are planning to implement. And I'm looking for the direct Bates number, please give me a second here. I'm scrolling as fast as my laptop allows me.

I will find it before we're done.

Q Take your time.

A (Walker) Yes. So, this is -- starts bottom page, Bates 016. "In addition to the process described above" --

Q I'm sorry, the Bates page again?

A (Walker) Sixteen (016).

Q Oh, 016. Okay. I thought -- I was on 300 hundred and something.

A (Walker) Oh, no, no. Exhibit 1, Bates 016.

Q Okay.

A (Walker) The last two lines is where it starts:

"In addition to the process described above, Eversource will be adopting adoption-rate forecasts for specific technologies."

Q Yes. Okay.

A (Walker) And then, we go into a bit of a description of how that works. Granted, this is a paragraph, it's not three or four pages. But we do have a little bit there.

CHAIRMAN GOLDNER: And that's why Commissioner Simpson was earlier asking about prior dockets and prior orders, to make sure that what we ask for ends up in the order. And, so, that's -- not to put too fine a point on it, but it's important that, when the Company makes a commitment, that it ends up in the LCIRP.

All right. So, just in the spirit of time, I think we should pause here for the day. I have a few more questions, the Commissioners might have a few more tomorrow.

I will say that I personally spent a decade as a planner. And I can tell you that I know that, if your forecast is good and it works and it's right, everyone is like "yes, that's what you were supposed to do." And, when it's

wrong, you get blamed, right? So, it's a tough profession. And I appreciate the testimony today, because I know it's a difficult task.

So, let's do this. We didn't get as far today as I think maybe any of us wanted, or it's at least more than I anticipated -- or, less than I anticipated. So, I'm going to again defer this question of the late-filed Partial Settlement.

I'll ask, Attorney Ralston, if you could -- maybe we could lead off tomorrow, if you still want to move forward with that Settlement, and you could let us know if you still want to, and then we can work on dispositioning it.

The hearing time was set somewhat unusually for this hearing, in tomorrow at 9:30. I'm not quite sure why, honestly, but that's the time that was set. So, we have it up at 9:30.

Again, as a reminder, the Eversource witnesses should remain available.

And I'll just do a check-in before we adjourn, if there's any other issues before we adjourn?

[No verbal response.]

CHAIRMAN GOLDNER: No? Okay. Very good. We'll thank everybody. I'll thank the witnesses in particular, a very long day, and appreciate everything. And we are adjourned until tomorrow.

(Whereupon the hearing was adjourned at 4:40 p.m.; and the hearing to resume on March 8, 2023, commencing at 9:30 a.m.)