In The Matter Of:

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Docket No. 470B

April 18, 2019

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STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Docket No. 470B

Motion to Reopen an Application from NTE Connecticut, LLC, for a Certificate of Environmental Compatibility and Public Need for the Construction, Maintenance, and Operation of a 550-Megawatt Dual-Fuel Combined Cycle Electric Generating Facility and Associated Electrical Interconnection Switchyard Located at 180 and 189 Lake Road, Killingly, Connecticut

Regular Hearing held at the Connecticut Siting Council, 10 Franklin Square, New Britain, Connecticut, Thursday, April 18, 2019, beginning at 11:00 a.m.

H e l d B e f o r e:

ROBERT SILVESTRI, The Hearing Officer

A p p e a r a n c e s:

Council Members:

ROBERT HANNON,
DEEP Designee

LARRY LEVESQUE,
PURA Designee

DANIEL P. LYNCH, JR.
MICHAEL HARDER
EDWARD EDELSON

Council Staff:

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THE HEARING OFFICER: Good morning, ladies and gentlemen. This hearing is called to order this Thursday, April 18, 2019, at 11 a.m. My name is Robert Silvestri, member and Presiding Officer of the Connecticut Siting Council.

This evidentiary session is a continuation of the public hearing held on April 4, 2019, at the town hall meeting room in Killingly. It is held pursuant to the provisions of Title 16 of the Connecticut General Statutes and of the Uniform Administrative Procedure Act upon a motion to reopen an application from NTE, Connecticut LLC for a certificate of environmental compatibility and public need for the construction, maintenance and operation of a 550-megawatt dual-fuel combined cycle electric generating facility, and associated electric interconnection switchyard located at 180 and 189 Lake Road in Killingly, Connecticut.

On February 14, 2019, the Council, pursuant to a request filed by NTE Connecticut, LLC, and the provisions of Connecticut General Statutes Section 4-181AB reopened the May 11, 2017, final decision rendered in this matter.

A verbatim transcript will be made of

this hearing and deposited with the town clerks' offices in Killingly, Putnam and Pomfret for the convenience of the public.

And we will proceed in accordance with the prepared agenda, copies of which are available near the side door. We will proceed with the appearance of the party, the Town of Killingly.

Attorney Bachman, could you please begin by swearing in the witnesses?

M A R Y C A L O R I O,

C A R L S T O P P E R,

called as witnesses, being first duly sworn by the Executive Director, were examined and testified on their oaths as follows:

THE HEARING OFFICER: Ms. Calorio and Mr. Stopper, you have offered the exhibit listed under the hearing program as Roman numeral 5B1.

For identification purposes, this is the prefiled testimony dated April 11, 2019.

Is there any objection to marking this exhibit for identification purposes only at this time?

MR. BALDWIN: No objection.

THE HEARING OFFICER: Thank you.

Ms. Calorio and Mr. Stopper, did you prepare or assist in the preparation of Exhibit Roman numeral 5B1?

THE WITNESS (Calorio): Yes, we did.

THE WITNESS (Stopper): Yeah.

THE HEARING OFFICER: Thank you.

Do you have any additions, clarifications, deletions or modifications to this document?

THE WITNESS (Stopper): No.

THE HEARING OFFICER: Thank you. Is this exhibit true and accurate to the best of your knowledge?

THE WITNESS (Stopper): Yes, it is.

THE HEARING OFFICER: Thank you. And do you offer this exhibit as your testimony here today?

THE WITNESS (Stopper): Yes, we do.

THE HEARING OFFICER: And do you offer this as a full Exhibit?

THE WITNESS (Calorio): Yes, we do.

THE WITNESS (Stopper): Yes.

THE HEARING OFFICER: Thank you.

Does any party object to the admission of the Town of Killingly's exhibit?

MR. BALDWIN: No objection.

MS. CSANK: No objection.

THE HEARING OFFICER: Thank you. Hearing none, we will begin with cross-examination of the Town of Killingly by staff.

Mr. Perrone?

MR. PERRONE: Thank you, Mr. Silvestri.

Turning to the Town's April 11th prefile on page 5, in the center of the page there's discussion about slopes. And in NTE's response in the middle of the paragraph it says, the only location where a one-to-one slope is required is a 2500 square-foot area adjacent to wetland X.

At the last hearing I had asked NTE about that, and Ms. Gresock testified that one change that we made is incorporating two-to-one slopes all around the perimeter of the property, whereas before we had a retaining wall near wetland X.

So my question is, with that clarification from NTE with the two-to-one slopes all the way around is it still correct to say that the Town accepts the changes made by NTE and no further action is required?

THE WITNESS (Stopper): Yes.

MR. PERRONE: Okay. Moving onto page 17 and 18 of the Town's prefile, at the bottom of page 17, order number 20 where the Town requires the road widening of Lake Road prior to commencement of construction. And at the beginning of page 18 in NTE's response NTE gets into how it doesn't necessarily need to occur that way, and they would do the widening prior to commencement.

But anyway, the Town of Killingly does not accept that response and will require that road widening be implemented prior to construction. My question is, would it be problematic if NTE did some limited site work, say, clearing prior to the widening of Lake Road?

THE WITNESS (Stopper): I think this response is predicated on the equipment, and the amount of use of -- of the road there would be prior to making changes.

So I think it's a question of whether those activities would result in some, you know, detriment to the other, you know, to the residents' use of the road and safety, you know, associated with the -- with the roadway and the -- and the project.

That's -- that's the concern.

THE WITNESS (Calorio): Yeah, and the Town has -- we have a meeting scheduled with NTE next week to further go through some of those, some of those concerns.

So we recognize that construction can happen in phases, and so there's timing around that. And so we want to better understand what limited site work might be done prior to that road widening so then we can, you know, coordinate better. So that meeting will be happening next week.

MR. PERRONE: Okay. And moving to the last page of the prefile, the additional orders of regulation and restriction. Towards the end, structural plans for the noise barrier will need to be submitted to the Town as well.

By that do you mean, drawings stamped by a PE taking into account the wind load?

THE WITNESS (Stopper): I think it's a combination of the actual engineering drawings in addition to knowing what the type of construction that the wall is -- is being proposed will be, or walls if they're going to vary along the length of the property on the west side.

And these were items that were not previously identified in the earlier submissions and apparently was a result of a modification to the planned design. It caused, you know, the need for the sound barrier.

So the Town would like to receive additional information to review and, you know, understand what is being proposed.

MR. PERRONE: Thank you. That's all I have.

THE HEARING OFFICER: Mr. Stopper, I just wanted to make sure the green light is on, on the microphone?

THE WITNESS (Stopper): It is.

THE HEARING OFFICER: Okay. Great. I had a little trouble hearing you. All right.

I'm going to continue with cross-examination with councilmembers, starting with Mr. Hannon.

MR. HANNON: Thank you.

On the document that was submitted on April 11, 2019, I have sort of a general question, and some of those have been answered. On number seven where the Town comments on plans for the installation, sewer, water main and gas pipelines

on Lake Road, including detailed plans for maintenance and the protection of traffic shall require a submission of the Town for review and approval before any site work shall commence. This I think is a little different tack than I think some of other comments that are made.

So in this respect I just want to make sure I understand what you're saying is you would like to see the plans so you can review them and approve them, but that approval and completion of construction of those utility upgrades is not going to prevent the project going forward from construction, because I think there are a couple of other comments that have made in here where you're saying if, for example, the gas line -- that should be approved and installed prior to starting construction here, and the same thing with the water connection.

And I'm just having a hard time, one, figuring out when you are saying you have to have that stuff reviewed and built before starting construction, versus this where I think you're just saying, on this one we want to see it before you start.

THE WITNESS (Stopper): In which? Could

you clarify for me what page that's on?

MR. HANNON: Eight of 34. It's at the bottom of 8 of 34, and NTE came back with this response.

And the Town's response was, given the critical nature of these approvals and the operation of the plant, the Town of Killingly does not accept NTE's appeal to waive any conditions required to comply with the municipal orders to regulate and restrict.

So I just want to make sure. So for the work in this case that is related to improvements to the roadway, your goal is to see the plans to make sure they're consistent with what the Town wants. So that does not in any way tie into the construction of the facility?

THE WITNESS (Calorio): Correct. We wanted to -- we want to make sure that we see the full plans and the full -- the stamped plan so we understand what the proposal is. It doesn't necessarily need to be fully constructed prior to.

MR. HANNON: Okay. And of course, right now I think it's been highlighted -- I thought that there were two other components. One was dealing with the gas line upgrade and the water

system upgrade.

The comments from the Town was that it was the Town's position that those needed to be approved and constructed prior to any construction taking place at the site.

Is that the Town's position?

THE WITNESS (Stopper): I believe the intent is that there would be approval of those additions that are necessary to serve the facility, and that all of the approvals necessary to -- to construct those, the gas main and the water main extensions or expansions would be in hand before actual physical construction could begin.

So that, understand that there are no other hinderances, you know, that would impede the project from moving forward if there was some later change in the permitting or the approvals necessary to construct those things that are vital to the plant's operation.

MR. HANNON: Because I think one of the issues that I have with that position is -- at least it's my recollection at the local level, like for example, planning and zoning would not be allowed to condition approvals based on other

entities that planning and zoning does not have any control over.

So this is where I'm just having a hard time squaring away this in my head, is because I think you're asking for some approvals and some of the construction to be done through the Department of Public Health, the Department of Energy and Environmental Protection, which really don't reflect on the Council or the locals.

So that's where I'm having a little bit of difficulty, sort of, reconciling those two different positions.

THE WITNESS (Calorio): And that's part of what our meeting with NTE is going to be next week, is really kind of stepping through what construction components they're looking at moving forward on that may -- we need to iron out that conflict to make sure that we fully understand that the approval processes are being maintained and finalized appropriately at all the levels.

MR. HANNON: And then I believe also in here there's some language about NTE having agreed to put up a bond for decommissioning.

Is that your recollection also?

THE WITNESS (Stopper): Yes.

THE WITNESS (Calorio): Yes.

MR. HANNON: And at what stage of the process do you anticipate that bond being posted? Prior to start of construction? After completion of construction? Any idea on that?

THE WITNESS (Stopper): Prior to start of construction.

MR. HANNON: Okay. So then taking that a little bit forward.

If for example the project were approved by the Siting Council, but something came up either with the Department of Energy and Environmental Protection as it relates to the gas line, or if it was something to do with the water system through public health, if one of those entities did not authorize that construction which may prohibit the plant from getting up and operational, is the bond that would be in place for decommissioning -- if they can't get up and running because they can't get the components that they need, I mean, is that something that offers a little bit of flexibility with the Town rather than having some of those components built and operational before the Town signs off?

THE WITNESS (Calorio): Sure. That

could afford some flexibility on the Town.

THE HEARING OFFICER: Thank you, Mr. Hannon.

We'll continue with Mr. Harder.

MR. HARDER: No questions. Thank you.

THE HEARING OFFICER: Mr. Levesque?

MR. LEVESQUE: As maybe it hasn't happened yet, but has the Town reviewed the weight limits of the Town's own bridges compared to some of the heavy equipment components that they have to bring in?

THE WITNESS (Calorio): Not that I'm aware of at this point.

MR. LEVESQUE: Is that something that they usually consult you with? That say, you know their heaviest overweight trailers, whether there's a safe and adequate route to get there?

THE WITNESS (Calorio): That's usually managed through the transit -- or the -- the transportation.

MR. LEVESQUE: The DOT heavy hauler?

THE WITNESS (Calorio): The DOT heavy hauler. So they would have all of those rates, and then for a large piece of equipment like that or a very heavy load they have to get the

preauthorization to -- to go travel certain roadways and -- and certain bridges. So all of that is usually mapped out through DOT.

MR. LEVESQUE: Have you ever done a major project, consulted with them to, you know, a current registration of bridges you own if there's any on your route throughout their --

THE WITNESS (Calorio): I don't know specifically which route and which bridges would necessarily be impacted, but we do have -- we do have the ratings of all of the bridges. So we are aware of which ones might be a concern.

THE HEARING OFFICER: Your town engineer would be the best one for them to consult with?

THE WITNESS (Calorio): Correct. Exactly.

MR. LEVESQUE: Thank you very much.

THE HEARING OFFICER: Thank you.

I have a quick question for you -- actually two parts. I believe it was on March 22nd that Killingly High School had to close due to some type of a water problem?

THE WITNESS (Calorio): So the Killingly High School is a well system. They are not connected to a public water system, or the

Connecticut Water system. It's a well system.

There they tested high on -- on a bacterial component part of their treatment facility. They had to run a separate chlorination process in order to be able to reopen school. So that independent -- they're a separate independent water treatment facility.

THE HEARING OFFICER: You actually answered the second part of the question which is, is it the same water source as --

THE WITNESS (Calorio): It's not.

THE HEARING OFFICER: Okay. Thank you very much.

THE WITNESS (Calorio): Separate water source.

THE HEARING OFFICER: Does any other Councilmembers or staff have any other questions before we move on?

(No response.)

THE HEARING OFFICER: Okay. Attorney Baldwin?

MR. BALDWIN: Thank you, Mr. Silvestri.

Just a clarification. Is the Town

familiar with the Siting Council's development and management plan process?

THE WITNESS (Stopper): Yes, I'm aware of it.

MR. BALDWIN: So you're aware that after, assuming the Siting Council approves the application and the applicant would be pulling together essentially construction plans for the facility, and that those plans would be delivered to the Town for additional review and comment prior to their final approval by the Siting Council?

THE WITNESS (Stopper): Yes.

MR. BALDWIN: Thank you.

THE HEARING OFFICER: Thank you, Attorney Baldwin.

Group parties, I have Not Another Powerplant, the Sierra Club, and Wyndham Land trust. Do you have any questions for the Town of Killingly?

MS. MILLER: Wyndham Land Trust and Not Another Powerplant does not have any questions for the Town.

THE HEARING OFFICER: Thank you.

The Sierra Club?

MS. CSANK: Your Honor, just one question if I may?

THE HEARING OFFICER: Come forward, please.

MS. CSANK: Good morning. Do you recall discussing a wall that is part of the project a little bit earlier?

THE WITNESS (Calorio): Which wall?

MS. CSANK: The noise barrier wall.

THE WITNESS (Calorio): The sound barrier, yes.

MS. CSANK: Does that wall serve any other purpose besides the sound barrier that you know of?

THE WITNESS (Calorio): Not that we're aware of. We just noticed them on the plans, and that's why we're asking NTE for further information on it.

MS. CSANK: So it doesn't serve any safety function, for example, that you know of?

THE WITNESS (Calorio): None that we're aware of.

MS. CSANK: And it wasn't analyzed for safety implications by the Town?

THE WITNESS (Calorio): No. Again, this

was something that we noticed on the more recent submission.

MS. CSANK: And in terms of the safety of the pipeline, the gas line, has that been analyzed by the Town?

THE WITNESS (Stopper): No.

MS. CSANK: Thank you.

No further questions.

THE HEARING OFFICER: Thank you.

And also Connecticut Fund for the Environment, do you have any questions for the Town of Killingly?

MS. FIEDLER: No questions.

THE HEARING OFFICER: Very good. Thank you.

We will continue with the appearance of the applicant. And Attorney Baldwin, we'll give you a few minutes to get organized.

MR. BALDWIN: Thank you.

(Pause.)

THE HEARING OFFICER: Yes, Attorney Baldwin?

MR. BALDWIN: Mr. Silvestri, I would

just point out for the purposes of the record that our witness panel remains the same. I would remind our witnesses that they are sworn in, in this docket. So they're still under oath.

T I M E V E S,
C H R I S R E G A,
L Y N N G R E S O C K,
P A U L J. H I B B A R D,
N O R M T H I B E A U L T,
S C O T T H E S K E T H,

recalled as witnesses, being previously sworn by the Executive Director, were examined and testified under oath as follows:

MR. BALDWIN: We have two additional exhibits that were submitted on April 11th that we'd like to get at least a portion of our witness panel to verify today.

They include the slide presentation that Ms. Gresock used at the start of the public session back in Killingly on the 4th of April. And the second are responses to the Siting Council's late-file exhibit request that were made in a combination during the hearing and then immediately following the hearing. Those were

also dated April 11th, and we offer those for identification purposes subject to verification.

THE HEARING OFFICER: And these are exhibits marked as Roman numeral two, item B, numbers ten and eleven on the hearing program. Correct?

MR. BALDWIN: Yes, sir.

THE HEARING OFFICER: Thank you.

MR. BALDWIN: If I could ask at least a portion of our witness panel, did you prepare or assist in the preparation of those items listed in the hearing program under Roman 2B, items 10 and 11? Mr. Rega?

THE WITNESS (Rega): Yes, I did.

MR. BALDWIN: Ms. Gresock?

THE WITNESS (Gresock): Yes.

MR. BALDWIN: Mr. Eves?

THE WITNESS (Eves): Yes?

MR. BALDWIN: Mr. Hesketh?

THE WITNESS (Hesketh): Yes.

MR. BALDWIN: And do you have any corrections, modifications or amendments to offer to any of those exhibits? Mr. Rega?

THE WITNESS (Rega): I do not.

MR. BALDWIN: Ms. Gresock?

THE WITNESS (Gresock): No.
MR. BALDWIN: Mr. Eves?
THE WITNESS (Eves): No.
MR. BALDWIN: Mr. Hesketh?
THE WITNESS (Hesketh): No.
MR. BALDWIN: And is the information contained in those two new exhibits true and accurate to the best of your knowledge? Mr. Rega?
THE WITNESS (Rega): Yes, it is.
MR. BALDWIN: Ms. Gresock?
THE WITNESS (Gresock): Yes.
MR. BALDWIN: Mr. Eves?
THE WITNESS (Eves): Yes.
MR. BALDWIN: Mr. Hesketh.
THE WITNESS (Hesketh): Yes.
MR. BALDWIN: And do you adopt the information in those exhibits as your testimony in this proceeding, Mr. Rega?
THE WITNESS (Rega): I do.
MR. BALDWIN: Ms. Gresock?
THE WITNESS (Gresock): I do.
MR. BALDWIN: Mr. Eves?
THE WITNESS (Eves): Yes.
MR. BALDWIN: And Mr. Hesketh?
THE WITNESS (Hesketh): Yes.

MR. BALDWIN: I offer them as full exhibits.

THE HEARING OFFICER: Does any party object to the admission of the applicant's new exhibits?

MS. FIEDLER: No objection.

THE HEARING OFFICER: Hearing none, the exhibits are admitted.

We'll continue with cross-examination of the applicant by Mr. Perrone.

MR. PERRONE: Thank you, Mr. Silvestri.

Turning to the late-file exhibits, I'll start with number one. In the response NTE notes that they have their April 8th letter to DPH and DPH and mentioned they would communicate directly with the Council.

My question is, have you heard anything else from DPH since that filing of the April 8th letter?

THE WITNESS (Eves): No.

MR. PERRONE: Late-file Exhibit Number 4 where we have the capacity factor of the duct burner. My question on that, can the duct burner itself ramp, or is it basically full on or full off?

THE WITNESS (Rega): The burner can ramp.

MR. PERRONE: Okay. Next, a public benefit-type question. I'm going to refer to a section of the 2019 regional electricity outlook.

MR. BALDWIN: Excuse me, Mr. Perrone? Is that one of the -- just to clarify -- the administrative notice items?

I just want to make sure the witnesses have it in front of them before we -- if you have a copy we'll take that, but otherwise, we can pull it up.

MR. PERRONE: I do have a copy.

Okay. On page 32 -- I'll read the section. New England has adequate capacity resources to meet the projected demand, however as more limited energy resources are developed and traditional generation resources retire the grid may not be able to supply enough energy to meet electric demand.

The ISO first identified this issue as a wintertime fuel security problem, but the broader issue of a year-round energy security will need to be addressed as the operational dynamics of the hybrid grid take hold.

So my question is, given the concerns about energy rather than capacity, how could KEC fit into this and potentially address that issue?

THE WITNESS (Hibbard): The -- the section that you're referring to, I think it's important first to notice that it's focused on the energy security problem.

And the reason ISO here refers to the fact that it has sufficient capacity is because in each subsequent forward capacity market event, or each forward capacity year they have obtained sufficient resources to meet the capacity -- the resource adequacy requirement. So that's in effect the first thing they're saying here is, we have sufficient capacity resources.

The focus of the document itself is -- or the content you're referring to is on specifically the energy security problem. So on the first part KEC does contribute to meeting the capacity requirement, the resource adequacy requirement, because it has been granted a capacity supply obligation.

On energy security, in my testimony I try to identify several ways in which I believe KEC will help address the energy security problem

for the region primarily being a resource that has fuel security through a long-term firm transportation contract for natural gas as well as dual-fuel capability. And that's the sort of fuel security that ISO is referring to as being what the region needs to meet that, that need.

MR. PERRONE: So I understand that addresses the wintertime part, but they also mention a broader issue of year-round energy security. Would it contribute to energy security on a year-round basis?

THE WITNESS (Hibbard): The -- it's not particularly clear exactly what they mean by a year-round energy security issue. I think what -- what they are probably referring to here is essentially the same issue, but it being a year-round issue as opposed to just a wintertime issue and the need for having sufficient resources that can generate energy in all months of the year.

In the past ISO has referred, certainly not as much as they have to the winter security issue, but to the potential for gas-related contingencies.

For example, the loss of the pipeline or

maintenance of a major pipeline in the summer potentially raising the same sort of fuel secure -- energy security issues that they worry about with respect to the winter. And so that may be specifically what they're referring to here.

MR. PERRONE: Okay.

THE WITNESS (Hibbard): And the same -- the same thing holds, Mr. Perrone, that -- that ultimately KEC's firm transportation contract is a 365-day per year firm contract. And the dual-fuel capability including storage capacity, as well as replenishment capacity would still be there and be able to make those contributions.

MR. BALDWIN: For my own selfish purposes, I just want to confirm that we're talking about administrative notice item number 45?

MR. PERRONE: Absolutely. Yes.

Moving onto page 38 of that document --

THE WITNESS (Hibbard): Mr. Perrone, I apologize. May I just supplement what I said before?

MR. PERRONE: Sure.

THE WITNESS (Hibbard): The one thing I didn't mention is what -- one of the things that

ISO is also referring to here is the integration of variable resources whereas that happens over time as the system is decarbonized that vast amount of variable resources -- and in here they're looking out in the future -- are not as -- and they can be as sure. It's the same sort of fuel security issue that they're concerned about with resources that rely upon fuel being delivered just in time.

So to the extent that the level of variable resources integration happens that could present fuel security. That could also contribute to fuel security issues throughout the year without having sufficient resources available that do have fuel security in place through all months of the year.

THE HEARING OFFICER: Mr. Hibbard, could you explain briefly decarbonized?

THE WITNESS (Hibbard): I -- I think there's -- there's certainly a recognition in this document, and I think a general recognition throughout the New England states at least at the regional level that the energy systems we rely on will be decarbonizing over the next several decades, and that it's that transition.

How that transition happens is critically important both to meet the various states' goals of reducing carbon emissions from all energy sectors by, for example, by 80 percent by 2050. And it's that -- how that transition happens out over the next several decades will be extremely important for consumers and for reliability.

But I -- I do think that there's a common understanding at this point that that is the path that we're on.

THE HEARING OFFICER: So could I say that decarbonized would contain or include both -- coal, oil and natural gas?

THE WITNESS (Hibbard): Well, I -- I would actually take a step back. I think in order to meet the specific policies and goals that the states are promulgating, and will continue to promulgate, in my opinion, going forward -- really the most -- there are -- I think of it as three major steps.

One is, we have to electrify transportation. We have to electrify buildings, the building sector, heating. So that's -- we won't meet -- the New England states will not meet

their -- their decarbonization goals without doing that. And that is sort of -- step number one can achieve major amounts of carbon reductions.

Step two is that obviously massively increases demand on the electric system, and so critically important in continuing that phase of decarbonization is, number one, integrating a lot more renewables than are even currently planned as is discussed here in this document, but also decreasing the carbon intensity of the fossil fuel generation that will have to remain in place for at least some number of decades to support that level of integration, but also to reach the goals out in 2050.

It's not, you know, in my view de -- reducing the carbon intensity of the generation that we need to have in place includes -- will eventually lead to the retirement of all the coal and oil resources, but also will include increasing the efficiency of generating electricity with natural gas.

I think all of those are going to be critical elements of meeting the various states' decarbonization goals over the next several decades.

THE HEARING OFFICER: Thank you.

Mr. Perrone, please continue?

MR. PERRONE: Sure.

Turning to page 36, it notes that the Mystic generation station units, they'll be retained. Other resources seeking to retire will be evaluated under new provisions to determine whether a fuel security reliability need exists.

But the last part, the ISO's ability to retain resources for fuel security will expire after the 2024/2025 period. And with the expiration of that and the inability to retain resources for fuel security could KEC help address that issue?

THE WITNESS (Hibbard): I absolutely believe KEC helps address this issue.

The -- the expiration at -- in '24 and '25 is, I believe, here specifically referencing the fact that FERC's approval of the Mystic decision and ISO's fuel security analysis is predicated on them shifting to making wholesale market changes that would accomplish the same objective without, you know, without having to force ratepayers to pay cost of service contracts for existing units, and as in this case keeping

uneconomic units in operation beyond their point of economic retirement.

So that was FERC's requirement for approving -- not requirement. That was a provision that FERC expects of ISO New England in order to allow for this retention of these units to be in place and to be temporary.

The goal there is to develop market-based mechanisms that will provide that same level of fuel security. Those mechanisms are essentially the mechanisms that will provide additional revenue for units that can contribute to maintaining that fuel security.

And in all of these market mechanisms that ISO New England is working on KEC would qualify to earn revenues under them because they have a firm transportation contract for natural gas. That is what is specifically different from all of the other gas-fired generators that wouldn't necessarily qualify unless they entered into a similar firm transportation contract.

So KEC with the combination of the dual-fuel capability as well, I think with those two facets they will absolutely be able to contribute to maintaining this level of fuel

security.

MR. PERRONE: Now I would like to get into the potential plant retirements. Is it correct to say that Millstone and Seabrook Nuclear Powerplants recently received long-term contracts to sell their output to local utilities?

THE WITNESS (Hibbard): I am aware of Millstone, yeah -- yes, at least some portion of their capacity. My understanding, it has recently been locked up for a long-term period through state-based contracts.

MR. PERRONE: In your opinion, as a result of those contracts would that keep both those plants operational for the foreseeable future?

THE WITNESS (Hibbard): For at least the term of those contracts, that would be my expectation.

I -- I should say, Mr. Perrone, I'm not -- I believe that to be true for Millstone. I don't personally know the size of the -- of what was signed up for Seabrook. So I -- and that would be -- that would be an important thing for me to come to that conclusion.

But obviously if they've entered into a

commitment for even a small portion of their capacity, their expectation would be that they'll -- they'll be in operation for the term of that contract.

MR. PERRONE: Next I would like to get into what ISO lists as the at-risk units, and on page 18 it has approximately 5,000 megawatts.

And going back to page 32 there's a table in the center of that page, protected changes in key New England power resources and energy efficiency. And each fuel source has two scenarios, the through 2018 and 2027. And in it, in these scenarios it's showing retired and at-risk by 2027.

In your opinion, or based on any analyses that you have seen do you agree with 2027 as an estimated date by which the at-risk and retired units would be offline?

THE WITNESS (Hibbard): I -- I would want to look at this to see what's behind each of the numbers in each of these fuel categories. Obviously having -- having said that, I think I probably would not give a very specific answer about exactly which units in what portion of oil, coal and natural gas units will retire by 2027.

That's something that certainly could be estimated and modeled.

I think of it a little more generically. I think the whole purpose of the wholesale markets is to lead to that transition. And you know, particularly with respect to the oil and coal units, they're not economic now and it's hard to imagine they can continue to operate going forward for very long.

There is obviously some option value with keeping them around and operating them when prices are high. But you know, if you think of it, as soon as they have to spend, make a significant capital investment for a boiler tube replacement, or for anything then it becomes increasingly difficult to support continuing to take on a capacity supply obligation, because just the revenues aren't there to support it.

So you know, my view is that we don't know if it's next year or the year after, or five years from now, but virtually all of the coal and oil units will retire because they're simply uneconomic.

I also believe that these forces and the progress that's been made in generation efficiency

for natural gas-fired units -- and the same challenges economically mean there will be a fair amount of gas-fired generation that exists on the system now that will retire as well that's older and less efficient.

So ISO's focus here -- because the question is on fuel security -- is on oil and coal, but I think from a market perspective I wouldn't stop there. I think at least at some point over the next ten years it won't just be oil and coal. It will be the more efficient -- older and dirtier gas-fired units will begin to retire as well.

MR. PERRONE: You mean, some of the older steam units?

THE WITNESS (Hibbard): Yeah.

MR. PERRONE: And a couple other questions on plant operation. Is it correct to say that KEC can only burn ULSD when gas is not available?

In other words, you don't have the option to run on ULSD purely for economics. Is that right?

THE WITNESS (Eves): Yes, that's correct. That's a condition of our air permit.

MR. PERRONE: And if the gas side of the plant was shut down for maintenance purposes could you run on ULSD?

THE WITNESS (Eves): No.

MR. PERRONE: All set on that topic. I'm going to go back to the municipal regulate and restrict topic we were discussing earlier.

Turning to page 9 of the Town's prefile. And that is IWWC number seven.

NTE notes that it would obtain all necessary permitting for water, sewer, natural gas, but the permitting would run concurrently with the construction.

My question is, hypothetically, if NTE were required to secure those permits before commencement of construction of KEC how would that impact your construction schedule?

THE WITNESS (Eves): And I believe the permits you're talking about here are the Yankee Gas permits and the water company?

MR. PERRONE: Yes.

THE WITNESS (Eves): Yeah. Okay. So the water company already has their diversion permit. They still have to do a little additional work on where they're going to lay the pipes.

But you know, as we responded to the DPH concerns the construction will be done in, you know, in a phased process. Our expectation is that we're going to be in a position to start construction with the approval here early this fall.

With any kind of restriction that would force that construction to start later -- would be an impact on our ability to get online to meet that, our capacity supply obligation.

MR. PERRONE: Turning to page 12, this is more a potential clarification of the NTE response. Number twelve of the Town's prefile, PZC number seven, water supply improvements shall receive the permitting before commencement of construction, and water mains shall also receive their permitting prior to commencement of construction of construction.

But in NTE's response, NTE says NTE does not believe that the water system improvements need to be completed before commencement. Does NTE have any potential changes to that response?

My reading of it, the Town was asking about permitting before construction, and the response seems to point more towards completion

before construction?

THE WITNESS (Eves): Yes, I would say in rereading that it appears that the planning and zoning comment number seven is referring to permitting. And -- and we're clearly saying that we don't believe the improvements need to be done before we start construction.

But when I look at the Connecticut Water Company and Yankee Gas, I mean, we -- we're merely customers of theirs. I mean, we're going to be big customers. They've got -- they've got an obligation to serve us and we have contracts.

We can, you know, we can be -- we can monitor and see what they're doing, but as their -- as their permitting goes, we don't really have, you know, authority or -- over their permitting. I think it could be -- it could be problematic for us -- for us to have an obligation that our suppliers have their permits in place before we start construction.

We've got no control over that process, but we do have -- in the agreements that we've signed with Connecticut Water and with Yankee Gas we have dates that they are obligated to have that, that those systems are online to support

our -- support our project.

THE HEARING OFFICER: Mr. Eves, I have a followup on that.

What's the default if they don't satisfy those dates?

THE WITNESS (Eves): I would have to look at those, back again at those contracts, but we do have default provisions in both contracts.

MR. PERRONE: Moving onto the end of the Town prefile at the very last page, 34, there's additional orders of regulation and restriction.

Could NTE respond to the Town's additional orders of regulation and restriction?

THE WITNESS (Eves): And you're talking about number one here on the last page?

MR. PERRONE: Absolutely.

THE WITNESS (Eves): Right. Yes, and I would say looking at that, as the town manager mentioned, we do have a meeting set up to sit down and actually go through all of these.

And -- and as we have already had a preliminary review we don't see any -- any issue on any of these that we don't believe that we can resolve together. So we're going to be getting started on that on Wednesday, or I would say

getting into detail on Wednesday on that.

As far as this order here, you know, they ask us -- part of this is to say, do some alternative noise analysis and that is no problem for us. I mean, we will be doing that regardless, but we're good with that.

And did you want to answer?

THE WITNESS (Gresock): Yeah, I just wanted to say that the sound barrier that's reflected in the application are one solution, and it's always a standard practice for the design engineers in final design to optimize. The sound walls may ultimately be proposed or not proposed, may have slightly different dimensions.

There is a lot of flexibility to be able to design them in a way that meets local preferences, and we would expect that that information would be provided as part of a D and M filing such that that information would be -- would be shared prior to construction.

MR. PERRONE: So these dimensions we have here are preliminary?

THE WITNESS (Gresock): These dimensions are reflecting the compliance assessment in this analysis and report, and any tweak to the design

will be required to continue to meet those compliance levels, but may result in some slightly different mitigation solutions.

MR. PERRONE: And just adding onto what you had mentioned, if in the end the alternative ends up being the noise barrier, could you include the final structural plans stamped by a PE and certifying code compliance, and include that in the D and P plan if this project is approved?

THE WITNESS (Rega): Yes, we should certainly be able to do that.

MR. PERRONE: One second.

This is regarding the backup generator. I understand the emergency generator engine is 1380 kW, and finding of fact 262 said that the generator is 1500 kW, presumably the electrical output.

Would that number need to be revised? If the engine is 1380 would the electrical output be somewhat less than that?

THE WITNESS (Rega): I don't have the reference in front of me, but certainly if the mechanical horsepower was for this 1380, then the electrical would be somewhat less than that based on the generator efficiency.

MR. BALDWIN: Mr. Perrone, I'm sorry. What finding of fact number were you referring to?

MR. PERRONE: 262.

MR. BALDWIN: Thank you.

MR. PERRONE: At the last hearing I had asked about the gray water alternative, and I understand the testimony was, you know, going forward with the potable water is the plan.

In the findings of fact 492 to 494 originally there were listed some drawbacks or disadvantages to the gray water alternative. Do those drawbacks still stand?

THE WITNESS (Eves): Yes. Yes.

MR. PERRONE: Next, I would like to get into ULSD deliveries. I know we've covered part of that in the late file, but looking at figure two, in the EOSP CC, right next to the oil tank are their -- basically three stations where you can unload ULSD.

THE WITNESS (Rega): That's correct.

MR. PERRONE: Okay. And I understand based on the calculations it was approximately three trucks per hour. Can an individual truck unload in an hour's time?

THE WITNESS (Rega): An individual truck

can unload in less than one hour. I don't have the exact number here, but -- but it's certainly less than an hour. So it was -- it was approximately 40 minutes, I believe.

MR. PERRONE: Okay. That's fine.

Turning to response to Council interrogatory number 45, set 2, that was the investigation into farmland soils. I understand NTE's soil scientist investigated the area where the proposed project overlaps with mapped agricultural soils, and they found that the soils are not typical of those.

Based on such results would the proposed project affect prime farmland soils or important agricultural soils?

THE WITNESS (Gresock): It would not.

MR. PERRONE: All right. I just have a few other clarifications.

Mr. Rega, at the last hearing I asked you a few questions on hydrogen storage and replenishment of hydrogen, and you had mentioned the hydrogen needs to be replenished because there's some small leakages from the seals, and you also mentioned during outages.

My question is, how would outages affect

hydrogen loss?

THE WITNESS (Rega): It -- it wouldn't be every outage, but if there were an outage having to do with maintenance on a particular generator -- obviously that generator, in order to be made safe the hydrogen would have to be evacuated out of that generator.

But again, that that's only for a generator outage -- the generator maintenance. I'm sorry.

MR. PERRONE: Moving onto ammonia. I understand ammonia would be used for emissions control. Would you have to use the ammonia during only ULSD operations, or also natural gas?

THE WITNESS (Rega): Natural gas as well.

MR. PERRONE: Okay. Roughly how often would you need deliveries of ammonia?

THE WITNESS (Rega): I don't have that number. I would expect it to be approximately -- well, I'd rather not give you an approximate number. If I could get back to you with that number?

MR. PERRONE: That's okay. That's fine.

And lastly, at the last hearing there

was discussion about reducing greenhouse gas emissions, namely CO2. And there was testimony that there's some technology changes in terms of treatment of emissions and in the combustion process itself that are very close in the market.

My question is, could you tell us about -- tell us more about which technologies could potentially reduce CO2 emissions without using carbon capture?

THE WITNESS (Eves): The -- the ones that are the closest are -- is in the combustion technology and the combustion turbines. And what the manufacturers continue to work on is how to control the flame in the combustor to keep the temperature at -- at a level that does not produce -- produce those gases.

So as you know, working with the Mitsubishi machines here, as they come up with the new technology to control those emissions we'll implement those.

MR. PERRONE: So your Mitsubishi CTG could potentially be upgraded later to include those features?

THE WITNESS (Eves): Yes. Yes. I mean, of course, depending on what the -- if they -- if

they have an upgrade for this class of machine, which is very likely that they will, we can implement that.

MR. PERRONE: Thank you. That's all I have.

THE HEARING OFFICER: Thank you, Mr. Perrone.

Mr. Eves, I just wanted to stay on that question for a second. Back in my old chemistry days I would remember complete combustion would go to CO2. And if you're not going to CO2 it would probably go to CO, carbon monoxide.

Is that kind of the trend, to go away from CO2 to CO, and then try to capture the CO?

THE WITNESS (Rega): Yeah -- I'm certainly not aware of that trend. We obviously do have an oxidation catalyst included which reduces CO in the unit, but I'm not aware of a trend to go from CO2 to CO. Certainly any -- any improvements in efficiency would reduce CO2 efficiency of the unit.

THE HEARING OFFICER: Okay. And Mr. Rega, I want to stay with you for one minute or so.

You mentioned before 40 minutes to

unload one truck. Does that include safety checks, chocking, paperwork, the whole bit?

THE WITNESS (Rega): Yes, it does.

THE HEARING OFFICER: In addition to offloading the truck?

THE WITNESS (Rega): That's correct.

THE HEARING OFFICER: Thank you. I'd like now to turn now to Councilmember Mr. Harder for continued questions.

MR. HARDER: Thank you, Mr. Silvestri.

I just have a followup on one issue. Actually Mr. Perrone's last question deals with it and that's the issue of the greenhouse gas emissions.

The conversation we had -- and I think in the back and forth a minute ago you alluded to a pretty strong commitment the company made this session in Killingly to completely eliminate emissions by 2050, I guess it is. And you had indicated it would be through a combination of treatment and -- of the emissions and the combustion process.

And I guess beyond what you just indicated, especially as it relates to treatment, but anything you may not have mentioned a minute

ago, could you at least give us without getting too technical, you know, an indication of what you believe are those technologies that you described as very close in the market?

THE WITNESS (Eves): As we look at what has happened with combustion turbines over the past 20 years there's been tremendous advancements. When -- when we look to the -- in emissions profiles, as we look to the future we would expect those changes to -- those type of technical changes to continue to improve, plus improvements in the efficiency of the catalysts.

So I would think as we look to the future, the near-term future we're looking at those things. There's a lot of other work going on with regard to the control, the control of carbon that I think are further out in time.

But for the next, say, ten years as we look at the ability of this, to meet the commitment that we've made to reduce that greenhouse gas we feel pretty confident that -- that the technology in the machine is going to change to allow us to stay within those, within those commitments.

And as, you know, as Paul talked earlier

about new technology coming into the market as new technology comes in, no matter what the technology is, the older technology runs fewer hours.

So as we look at the capacity factor of this machine, you know, when we get out 15, 20 years, our capacity factor will start decreasing as well. So as our capacity factor decreases we will also emit less, less carbon.

MR. HARDER: You mean, it will be just be running less?

THE WITNESS (Eves): Exactly.

MR. HARDER: And does what you just said apply equally to treatment technologies? Not the capacity factor point, but you know, the other technologies that are coming in the future that may be in the very near future?

THE WITNESS (Eves): Would we -- is your question if a treatment technology comes along will we -- will we apply that to our unit, implement that at our facility?

MR. HARDER: Yes, that's one question.

THE WITNESS (Eves): And again, it -- it depends what the technology is. Theoretically, carbon capture, it's somewhat available today, but it's outrageously expensive. It's not proven.

I would say when commercial technologies become available we will absolutely apply those.

MR. HARDER: I think -- at least the impression I had was when you made the comment out it Killingly, I have the impression that there are a lot of technologies I think that -- and I wrote it down -- the words you used were, all kinds of technologies that are very close in the market.

You know, and I thought by that you meant both treatment and, you know, combustion technologies. So that, that's why I'm wondering, are there any that are in the very near future? I think you had said before that as those technologies become available, your commitment to implement them, which I assume means you're not going to wait until, you know, 20 years down the road.

But you know, that's what I'm getting at.

THE WITNESS (Eves): Correct. And yes, as they become available we will implement them. Mitsubishi has ongoing developments right now that they've made. They haven't made firm commitments, but they've told us they have a combustion turbine that will -- will -- that we'll be able to apply

to these units -- to this unit that will reduce the carbon.

I can't explain what that change is that they're working on, but they've got active programs in development and in testing to achieve these objectives.

MR. HARDER: Okay. This is the last question I have.

Based on what you know about those technologies that are coming down the road, is there anything about the site, any limitations on the site in terms of the size of the site, or trucks submitting to sensitive receptors, you know, residential situations or anything that would make it more difficult to implement those technologies?

Would you need three more acres to put in, you know, a treatment facility, something like that?

THE WITNESS (Eves): When I answered the question -- you said there's technologies coming, I was thinking primarily about that commitments that Mitsubishi has made. And there's no limitations. That -- that site provides no limitations that would impede us from adding those

advancements to our machine.

So I would -- the answer to your question is, from my perspective I don't see that site limiting the technologies that we can apply to reduce our carbon.

MR. HARDER: Okay. Thank you.

Thank you, Mr. Silvestri.

THE HEARING OFFICER: Thank you, Mr. Harder.

Mr. Eves, just to follow up on my part, you mentioned you anticipate running less in the future. Could you explain why?

THE WITNESS (Eves): You know, as -- as Paul was discussing here, you know, one of the attractive things of Killingly is our energy costs. So as -- and the energy cost is driven by efficiency. Emissions are by efficiency. And in this competitive market of producing this equipment efficiency is the -- is the big driver.

And as we look into the future, you know, we look 20 years down the road I can -- you know, looking at my past years I could say machines are going to definitely be more efficient 20 years from now than they are today.

The emissions profile is going to be

different 20 years down the road. It's going to be different than it is today, and they're going to be better.

And as those more efficient machines come online it will provide a lower energy cost to the ratepayers and as that -- over time as that happens our machine would run less.

THE HEARING OFFICER: Any anticipation as to when you might be on the downside?

THE WITNESS (Eves): I mean, that's a tough question, but I would say 20 -- 20 years is probably, you know, a pretty good number. Somewhere in the, you know, I don't know. Ten to 20 years maybe it starts dropping off.

THE HEARING OFFICER: Thank you.

I want to turn now to Mr. Levesque.

MR. LEVESQUE: As the solar panels become more efficient you might have some unused non-wetland, especially like south of Lake Road.

Would you consider using that area for some solar installation, or even if you didn't do it yourself, lease it to another operator?

THE WITNESS (Eves): So our site is roughly 75 acres; 65 acres on the north side of Lake Road, 10 acres on the south side. A third of

our site, of the facility site is basically low. It has wetlands and some other habitat in there that we are going to turn into a perpetual conservation easement. So we really couldn't put anything there.

When you look at -- at the ten-acre site on the south side of Lake Road, Eversource, to put their substation in is going to substantially take up that piece of land. And again, you know, the rule of thumb right now for solar is you need -- I think the number is ten acres for a megawatt. So we don't really have --

MR. LEVESQUE: I meant, a very small amount.

THE WITNESS (Eves): Okay.

MR. LEVESQUE: And because it's next to the road where this, the electric lines, are any -- a little here and a little there adds up?

THE WITNESS (Eves): If it makes sense to put a little in for, whatever reason, whether it's working with the local schools or -- or whatever, that would be something we definitely would be -- would be open to.

But there's not really a whole lot of room there, but I mean, if we're talking a few

kilowatts I think we could probably do something.

MR. LEVESQUE: Yeah. I figure it's better than a couple rooftops.

Thank you very much. That's all.

THE HEARING OFFICER: Thank you.

Mr. Hannon?

MR. HANNON: Thank you.

I want to go back and clarify something that was put in the record back on April 4th, on page 69 of the transcripts I was asking about the concrete Stormceptors that were in the design and how many were going to be located on the site.

And the response, and I -- pardon me if I mispronounce the name -- is Mr. Thibeault?

THE WITNESS (Thibeault): Thibeault.

MR. HANNON: Thibeault. You said, one?

THE WITNESS (Thibeault): Correct.

MR. HANNON: Based on the response that your organization provided to the Town -- you're stating -- and this is on page 7 of 34, the top of the page, the drainage design revised -- the stormwater pollution prevention plan has been modified to create three separate discharge points with hydrodynamic separators at each discharge.

So I just want to make sure that that is

in fact the accurate answer, and what was provided as part of the testimony the last time was inaccurate?

THE WITNESS (Thibeault): Right. We -- we did discuss the -- the possibility for adding those additional hydrodynamic separators through the other two discharge points. Yes, so that that would be an accurate statement.

MR. HANNON: Thank you.

A couple of questions I have are going to be difficult if not impossible to answer, but I would just like to get your opinion if I can.

For dealing with the water connection, what do you anticipate the timing for is obtaining the permitting, and how long it would take to actually construct? And I know you're not doing it, so that's why I think it's a difficult question to answer.

THE WITNESS (Eves): The -- the discussions that we've had with the Connecticut Water Company, the agreements we have is that they will have the local connection which is, I think, about a thousand feet down Lake Road. They will have done after 90 days after notice to proceed, and we would expect to give them notice to proceed

when we achieve financial closing.

And to do the interconnection between the Crystal and Plainfield systems, their contract has them completing that within 16 months after notice to proceed, which is well within the time that we would need the full quantity of water for startup activities.

MR. HANNON: Okay. And then the same basic question as it relates to the upgrading of the natural gas pipeline?

THE WITNESS (Eves): We are still working on the -- the contract with -- with Yankee. They're going to put -- replace an existing line which is either 4 or 6 inches, with a 16-inch line through an existing right-of-way.

And we are looking on -- at a schedule with them/for them to have that line complete. And I'd have to go back and look at the schedule, but it's -- it's three to six months before we would need gas to really get into the startup activities.

Do -- do you remember the dates, Chris?

THE WITNESS (Rega): I don't have them here. I can find them.

THE WITNESS (Eves): We can get the --

we can get the dates, but we -- the agreement that we have that we're working on with Yankee, the discussions we've had, that we've got the engineering agreements in place, that they're doing the design work.

So under that we're working on a schedule that we'll have that, that completed in time to support it with a margin of a few months to support our startup activities.

MR. HANNON: And then one of the issues which -- and I don't know how this will play into the permitting end of things, but if I remember correctly I believe somewhere in the documents the gas line -- I think it's a six-inch pipe right now -- was put in, I want to say, in the 1960s. And the only reason I'm saying that is because that predates EPA and it predates DEP. So although Eversource may have a right-of-way there, it's still fairly virgin territory.

So I'm not sure what you may or may not run into, unlike some other areas where there has been work conducted in a right-of-way. There may be something more recent as to what you might find out there.

So a couple other questions. Following

up on a question that was asked earlier, again on page 12 of 34. This is PZC number 7.

I guess, you know, again the question I have is in dealing with any type of delays. So that I believe if this plant goes forward I think you have a 2022 deadline in which you're supposed to be up and operational?

THE WITNESS (Eves): Yes, under the CSO we're required to be ready to go June 1, 2022.

MR. HANNON: So if some of these issues where permits are needed before actually doing site work and things of that nature, I can only assume that that would delay construction.

What is the impact if you are not able to start up the production on June of 2022?

THE WITNESS (Eves): Under the capacity supply obligation we have -- we have an obligation to provide power. So if there was -- an obligation to provide energy.

So if there was an energy emergency, an energy shortage and we had a CSO and we were unable to provide that energy we would pay a hefty penalty. So if it's -- yeah, if we're not ready to go there we'll have to be -- we'll have to make some other arrangements to find some unsold

capacity or whatever to back up, back up our commitments here.

MR. HANNON: On page 17 of 34, PZC number 19, the Town is talking about maintaining the authority to direct the owner applicant to cure any deficiencies in workmanship, which I don't have an issue with that. But than they go on to say, noncompliance will result in road construction project shutdown until measures to correct the issue to the Town of Killingly's satisfaction.

So I guess, what is the company's take on the Town having authorization whether it's for the road construction or other things on site to have the authority to issue, in essence, a cease-and-desist order?

THE WITNESS (Eves): And that is one of the issues that we've been talking to the Town about, because that's problematic for us. What we have been discussing is to come up with a procedure that if there's an issue, that we work through the issue.

We resolve the issue, and if it turns out that there's a problem that is a safety issue for the citizens, that they would have -- if we

don't resolve it in a timely manner, which is a procedure that we will work with the Town on, they will have the right to, for that portion of the project that is unsafe like the road, have the right to shut that down.

MR. BALDWIN: Mr. Hannon, if I could? Just because it kind of delves into the legalities here for the moment.

One of the other concerns I think we have is whether the Town, in fact, has the authority to do anything to shut down the project on the site. That authority, as far as I'm concerned, legally sits with this Council.

Now if they're talking about road improvements, town road improvements, that's a different issue and that's, I think, the issue that we're trying to resolve with the Town in our meetings next week.

Certainly if they are town road improvements that need to be we have to deal with certain issues that have arisen. That's something we will deal with the Town with, but I don't believe the Town has any authority to shut down any operations at the facility. That is something the Siting Council would only have the authority

to do.

MR. HANNON: I guess one of the concerns I would have, just in general -- and I don't mean any offense to any of the attorneys sitting in this building, but you can put a couple of them or more than that in a room and bring up a subject matter, and you're going to have that many different opinions.

Because part of the reason I'm worrying about this is because you have a third-party, an independent third-party reviewing things. People don't always see eye to eye to get to the same point.

So I'm just trying to figure out how that type of an issue gets resolved so that people are actually able to sit down, communicate, and figure out how to deal with a particular problem. I've just seen too many differences of opinions. So --

MR. BALDWIN: And I think we agree with that, which is why we're starting to think about establishing with the Town support a procedure in dealing with those issues so that we know going in, and that the Town knows going in what the steps will be going in.

If there's a problem we know how we're going to handle it so that's it resolves quickly. It's not to NTE's best interests or the Town's best interests to not deal with problems as they arise during construction. We can't eliminate all problems, but we can certainly dedicate ourselves to dealing with them in an efficient and appropriate manner.

THE HEARING OFFICER: Attorney Baldwin, would that also be part of your discussions next week?

MR. BALDWIN: It will be.

THE HEARING OFFICER: Thank you.

MR. HANNON: And then the other -- I guess the last question I have is on page 20 of 34 dealing with PZC number 27. And part of it goes along with the idea of requiring daily inspections. And I guess NTE's position is that daily meetings may not be required, or necessary.

So is that also one of those issues that you're going to try to work to a resolution with the Town?

MR. BALDWIN: It is. I would also point out that the Siting Council in my experience has, and has exercised the authority to require

inspectors for various things related to construction projects for all sorts of things, stormwater, environmental inspections, species determinations during construction activity to make sure that the Council's orders are adhered to. We fully expect that those types of conditions would follow suit here in this proceeding.

As to how often those inspections need to be, we would do whatever the Council requires us to do. We have to, but we plan on talking to the Town a little bit more about the inspection issue.

I think the Town said in their response, sometimes you may not need daily inspections. Sometimes you might, and I think that's something that we will work with them on, we will work with the Council on to make sure that we do what is necessary in order to make this project as successful as possible.

MR. HANNON: Thank you.

I do not have any other questions.

THE HEARING OFFICER: Thank you, Mr. Hannon.

I want to turn the clock back two weeks,

and I had brought us up to the five o'clock break last time we met, and want to continue with some of the line of questioning that I had from back then. So if it's a little jumpy, bear with me on it.

All right. If I go back to the air permit and that 50 percent transient operation restriction that's there, let's envision an electrical demand situation. Demand is down. Prices are down. ISO requests that you ramp down to 30 percent load.

Would you have to shut down in a case like that?

THE WITNESS (Rega): We would have to shut down. And if we're talking 30 percent of gas turbine load, then certainly. I would have to do the calculations to see.

30 percent of plant load, you know, there's some things we can do. If it's sort of an emergency condition we can take some of the load off of the steam turbine through bypassing of steam.

It's not how we like to operate. It's not an efficient way to operate, but if it was an emergency condition to operate we could get down

there. But yeah, a real air-permit restriction is 50 percent of gas turbine load only.

THE HEARING OFFICER: Okay. Thank you.

And I believe -- Mr. Hibbard, I believe I'm referencing your prefiled testimony starting on page 6. You had mentioned a firm delivered natural gas contract and dual-fuel capability.

And then further on, on page 9 specifically you stated that KEC would be able to always -- and I'm emphasizing always -- burn natural gas given its long-term firm natural gas transportation supply contract. And that it's stated that it would also provide flexibility to support that delivery of natural gas for heating to critical public institutions, residences, businesses, et cetera.

And I think we touched base on that, that you can get a sufficient amount of gas for your purposes and there would still be gas in that pipeline for hospitals, residents, et cetera. Is that correct?

THE WITNESS (Hibbard): Yeah. That's -- that's correct. The firm transportation contracts that the -- that Killingly has is in addition to and beyond what the local distribution companies

have in place to meet all of their demands.

THE HEARING OFFICER: Okay. I just wanted to verify that, because we did touch base on that last time.

Is the gas contract take for pay?

THE WITNESS (Eves): No. No. We -- we pay for what we take.

THE HEARING OFFICER: Okay. Thank you.

All right. This is going to be rather lengthy, and if you turn to page 15 of the prefiled testimony and you have 2017/2018 winter circumstances. All right?

I tend to follow ISO system prices, and I'm going to offer you a snapshot of what occurred on January 6th of 2018, as I lean into my questions. So if you bear with me?

5:25 p.m., January 6, 2018. The system was at 20,446 megawatts. I gauged the temperature in Hamden, Connecticut at 10 degrees Fahrenheit and it was minus 2 degrees Fahrenheit in Priscilla Lane.

The price was $221.51 per megawatt hour. Fuel mix had 4 percent coal, 35 percent oil, 19 percent nuclear, 23 percent natural gas and then whatever little balance was there was made up

of hydros and renewables.

Now if I look at that 23 percent natural gas portion it represented 4,262 megawatts versus capacity of what I saw, 18,175 at that time. So basically less than 25 percent of natural gas is being used, and the rest is going someplace other than to powerplants. And again, you have similar data in that footnote number 18 on that page.

So leading up to it, the question I have is, if KEC is approved and constructed how would its operation change that fuel mix, either what I just presented to you or what you have in the fuel note, and the percentages under the assumption that coal goes away but oil remains?

THE WITNESS (Hibbard): Sure, I think -- and setting aside for the minute the coal going away question, I -- what KEC would do to that fuel mix is it would increase natural gas-fired generation by a hundred percent of the capacity of the unit, and it would reduce oil generation, most likely.

THE HEARING OFFICER: How about pricewise?

THE WITNESS (Hibbard): Pricewise, I don't -- you know, any -- any additional gas

coming into the region could have an effect on the overall price of Natural gas.

Given the quantity of the gas flowing into the region under those conditions I don't know if it will be a measurable change in the price of natural gas or not.

THE HEARING OFFICER: Okay. And you don't foresee any constraints on the Algonquin Pipeline?

THE WITNESS (Hibbard): No. They -- what makes this -- what makes this complex I think for you all to think through is that the gas that's coming into New England from the West from the shale gas region has to go through New York.

And what we know is that the gas that flows through on the coldest winter days is essentially the amount of gas that LDCs and potentially others are purchasing and have firm gas transportation contracts for.

And what this does is it increases that quantity of firm transportation of gas on the coldest winter days coming into New England. There's no reason to believe that if that contract is not in place that quantity of gas wouldn't be absorbed in New York.

Con Ed has issued a moratorium. National Grid in New York is talking about a moratorium on gas service to their local gas companies and customers. And natural gas power generation in New York also plays an important role in reliability there under winter conditions.

So what this incrementally does for the New England region is it just increases the guaranteed amount of gas that's flowing into New England on those coldest winter days.

THE HEARING OFFICER: All right. Let me turn to 2019 towards the end of January this year. And I believe it was January 21st that Algonquin experienced some type of problem in Rhode Island.

What I have found from a Hearst MediaNews article from January 25th, a spokesman commented -- and I'll quote, in our initial analysis it indicates that the primary causes of the loss of natural gas service were an unusually high demand for natural gas on the Algonquin Pipeline due to cold temperatures that exceeded the system supply capability coupled with an equipment function which temporarily restricted available natural gas supplies, end quote.

So the question I have for you, is that

the same Algonquin Pipeline that would supply natural gas to KEC?

THE WITNESS (Hibbard): That -- my understanding is that's fairly far east from where KEC would be, is the -- is the first part of the answer to that question. Obviously if it's the Algonquin Pipeline it's the same Algonquin Pipeline.

But I -- I hesitate to read too much into this at this point in time, because I've heard anecdotally all sorts of things that potentially went on to cause that loss of pressure in their system.

And it was a loss of pressure that effective distribution level customers, not -- not interstate pipeline customers at the city gate or at powerplants. So I think -- I think I'd be careful to characterize exactly why that lass of pressure happened on the far eastern end of New England's gas pipeline system.

It wasn't necessarily related to a restriction on pipeline capacity flowing from west to east. It could have been something else happening at the east end of the gas pipeline system in New England.

THE HEARING OFFICER: When you mentioned distribution, that it could be a distribution issue, would you be getting natural gas from a transmission line as opposed to distribution?

THE WITNESS (Hibbard): Yeah.

THE WITNESS (Eves): I'll just make a clarification on that. So Algonquin is a transmission line. Yankee is a distribution company.

So the two-mile lateral between Algonquin and our facility will be under Yankee's terminology, a distribution line.

THE HEARING OFFICER: Understood. Thank you.

Now is the Algonquin Pipeline that would supply KEC, is that the same pipeline that supplies the Lake Road generating facility?

THE WITNESS (Hibbard): I don't know the answer to that. My guess is yes, but --

THE WITNESS (Eves): Yes, and it's the same pipeline.

THE HEARING OFFICER: Okay. But Lake Road would probably get it from a different distribution source?

THE WITNESS (Eves): That's correct.

And I don't -- I don't know for sure, but I think they may take it direct from Yankee -- direct from Algonquin.

THE HEARING OFFICER: I'm not sure either, which is why I'm posing the question. What I'm trying to get at though is, is it possible that if something happens to the Algonquin line that curtails the flow of natural gas, that it could affect both KEC and Lake Road?

THE WITNESS (Hibbard): There's, you know, this is -- and a lot of effort has been focused in the New England region on trying to figure, think through this difficult challenge that we have with gas supply during the coldest winter days.

And that's most of the focus in what you see ISO New England spending their time on in trying to design market rules to address and keeping units up for reliability reasons as a result. They -- they separately have mentioned in the past, although it's not at the forefront of their mind, the possibility that the loss of any one pipeline coming into New England could be catastrophic from the standpoint of having sufficient gas even to run the 4,000 megawatts

that you mentioned existed on January 18 2018, I think.

So that's -- that's what, you know, that's a gas pipeline continency that -- that they think about. It's never happened, but it's not -- it's one of those situations where in my testimony where I say, even under a gas system emergency KEC would be operating and providing power to keep the lights on, that's when they would click on oil to be operating and to be putting power onto the grid. And that's really the role of the backup oil.

Otherwise that it's -- so it's in addition to increasing the amount of gas coming into the region on the coldest winter days. If there were some sort of a disastrous event on one of the pipelines they would be able to continue to provide power.

THE HEARING OFFICER: Okay. You gave me a great segue into oil, which is where I was going next. And I'll go back to what was submitted to us recently, that it would be three tanker trucks now per hour.

Mr. Rega, if I look at math, again you would agree with me 7,700 gallons per tanker

truck. If I do the math on that I come up with 23,100 gallons per hour on three trucks, but you're still burning 23,594 gallons. So you still can't keep up?

THE WITNESS (Rega): Well, we -- yeah, we can certainly keep up, but the, you know, because the -- well, I think on average we're at about three trucks an hour. There may be some rounding errors in there.

I mean, that is an average number that we look at through the course of the day. I mean, it could be 3.1 trucks an hour if we do the math, but you know, it's -- unless I'm not following your -- your question.

THE HEARING OFFICER: No. I'm just trying to see if the tank is, again sized well enough or if three trucks are going to do the job.

You know, what I kind of get out of that, if you're doing three tankers you might have to cut load little bit and not run a hundred percent on oil.

THE WITNESS (Rega): No. We -- we would not have to cut load. We can certainly service with those three stations. Again, it doesn't take a full hour to unload a truck. We have some

flexibility there to -- to unload even more than three trucks an hour if we had to.

THE HEARING OFFICER: If you go back to your 40 minutes then I'll agree with you. If you stay with the hour, I don't.

THE WITNESS (Rega): I'm sorry. It takes approximately 40 minutes. I would have to confirm that number to unload one truck.

THE HEARING OFFICER: Yeah. But again, what you sent to us recently was three trucks an hour.

THE WITNESS (Rega): Is the average to keep up with consumption.

THE HEARING OFFICER: So again, if you're doing three trucks in 40 minutes then I'll agree with you that could maintain sufficient oil, that you can run a hundred percent on oil.

THE WITNESS (Rega): That -- that is correct. Yeah. I'm sorry if I wasn't clear in the response. Again, the three trucks an hour is just to keep up with consumption. That's not -- we do have more capacity in the unloading stations and because of the 40-minute unload time we could upload more than three trucks per hour if we had to.

THE HEARING OFFICER: What do you think of putting a fourth unloading station in?

THE WITNESS (Rega): We don't believe we need a fourth one.

THE HEARING OFFICER: Okay. Let me go back to the hypothetical natural gas interruption on Algonquin that's going to knock out both KEC and Lake Road.

All right. Both are going to fire up on oil. Lake Road has, I believe, an 840,000-gallon tank for ULSD, and they have 5 trucks unloading. All right. So they would need 143 trucks per day to continue their operation.

At three trucks per hour, if we stay with the three trucks, I calculate that KEC would need 72 trucks per day to continue operating. All right? If you add that up, I'm coming up with 217 trucks per day for two facilities.

Could an oil terminal and traffic provide -- to have 215 trucks deliver oil to both facilities? It seems like an awful lot.

THE WITNESS (Rega): I -- I don't know at this point whether we'd be sourcing our ULSD from the same, from the same source as Lake Road. I -- I don't know their --

THE HEARING OFFICER: Yeah, that was the related question I had. Did you pick an oil terminal yet that would supply ULSD?

THE WITNESS (Rega): We have not yet.

THE HEARING OFFICER: But again, I always look at contingency planning, and if natural gas is gone, somebody has got to rely on oil. If you've got to rely on oil the numbers I'm seeing are 215 trucks per day for two facilities to keep the lights on, and I don't know if that's feasible.

That's why I posed the question.

THE WITNESS (Hibbard): If I could jump in, Mr. Silvestri?

And this may not directly answer your question, but there are two thoughts I have on this one. One is, you know, obviously this has been a concern of ISO's even without a major pipeline disruption.

You know there, there have been -- there's some concern that if in a situation where we're constantly relying on replenishment of all the oil tanks in the region and the weather was particularly bad, or for some other reason it made the delivery of fuel oil difficult, that's a

reliability risk to the region.

And when I think of the firm natural gas contract that Killingly has, that's something that is incredibly important in that context, because when you think of the last cold snap the control room at ISO, New England's biggest concern was they were running out of oil in the region collectively. And so having an additional gas-fired generator that wasn't burning oil and was burning under a firm contract would be incredibly helpful.

In the -- I think in the context that you're presenting, loss of a major pipeline and some challenges associated with replenishment of fuel there are going to be a lot of things going on in the region to try to keep the lights on, including emergency government actions and everything else.

So you're sort of painting the nightmare scenario for ISO New England and something that has kept them up at night in the past.

THE HEARING OFFICER: I've gone through some nightmares in my past history, including bringing back old oil-fired cyclone units to try to make up for when the NRC closed down all the

nuclear powerplants. So yeah, that's where I'm coming from. Okay. Let me move on.

On March 12th of this year ISO issued a press release about New England's wholesale electricity prices in 2018 being higher than they were in 2017. Are you familiar with that press release?

THE WITNESS (Hibbard): I'm familiar with them mentioning -- them describing this, and I don't know what the specific press release is.

THE HEARING OFFICER: I'll try to help you a little bit. One comment that ISO made concerned the extreme cold weather, again back in July of 2018. And that demand increased for natural gas for heating leading to spiking prices, both for natural gas and electricity as we kind of discussed earlier.

In your response to interrogatory number 20 you anticipate an overall reduction of $215 million or perhaps more per year to wholesale electric costs. And if KEC is constructed and operational what might KEC's impact be to wintertime wholesale electricity prices?

THE WITNESS (Hibbard): So this is referencing the -- the study that was done

previously and the estimates therein. So this wasn't -- this wasn't an estimate for the year that you're questioning, and it wasn't an estimate that I completed.

I -- I don't know whether or not KEC's operation will necessarily drag down natural gas prices in the region. I don't -- I don't know that that would be the case. For the reasons we were talking about earlier, the more you have gas coming into the region the more of a price suppression affect it will have in most days of the year.

Under these winter conditions obviously the spot price for natural gas gets extremely high, and -- and will continue to do so. And that's really what was driving ISO's press release, that the overall average annual price of electricity went up because of natural gas. But that's really driven by what is the duration of the severe cold events in each year. That's what ultimately drives whether or not the price of electricity is a little bit higher or lower than the previous year.

Overall the existence of gas-fired generation in New England has just dramatically

plummeted the cost of electricity. And the -- the availability of shale gas has dramatically dropped the price of natural gas and electricity in the region even if during some -- some weeks in the winter months you see these significant spikes in the prices.

THE HEARING OFFICER: Yeah, I know. I believe yesterday or the day before prices were, like, 17, 18, 19 dollars.

I want to get away from natural gas. I want to get away from oil. All right. I'd like to move to your response to interrogatory number five, and this concerns the sulfur hexafluoride gas, SF6, and also with interrogatory number 35 concerning greenhouse gas emissions.

We talked about how you're looking at 2050 to possibly effectively eliminate GHG emissions, but you plan to employ SF6 in various breakers. Now CO2, carbon dioxide has a global warming potential of 1, but SF6 is up at 23,500. All right. And breakers tend to leak.

The question I have for you, have you considered eliminating the use of SF6 in the breakers and opt for an alternative such as dry-air vacuum technology?

THE WITNESS (Rega): I would have to check to see whether that alternative was explored. Certainly, SF6 breakers are, you know, the standard. I think both is used by Eversource and in powerplants.

I'm not -- I'm not familiar with the technology that you mentioned, and I'm not aware that we have explored that, that alternative, whether it's available for our sized powerplant or not. That's certainly something that -- that I can take a look at and get back to you.

THE HEARING OFFICER: For a reference, Mr. Rega, it's actively up and running in Germany, France, Switzerland. There's 550 units in North America since 2007 when they started this.

And if you look at the California Air Resource Board, or what they call CARB, there's a lot of phase-out dates that are there to really get rid of the SF6 and go do something else. So to give you a little bit of background.

THE WITNESS (Rega): Okay. Thank you.

THE HEARING OFFICER: If I have you turn to interrogatory number 32, it states that NTE was able to achieve significant decreases in the levels of wastewater discharge to the town sewer

system when running on ULSD.

How do you figure that these decreases were accomplished, and what were the proposed and after rates, if you will?

THE WITNESS (Rega): So we -- we modified the design somewhat where when we are firing on ULSD, instead of sizing our normal de-min system for the increased usage up to the ULSD, water consumption is a lot higher than on natural gas for water injection reasons. Instead of oversizing our water treatment system, which has a certain amount of waste associated with it as it operates, we went to a design where we would just bring in mobile demineralization trailers.

And -- and so therefore those could be used again just for the ULSD firing cases, and they have very little wastewater associated with those trailers.

THE HEARING OFFICER: And would you require a discharge permit from Connecticut DEEP?

THE WITNESS (Gresock): Yes. Yes, that's currently under review.

THE HEARING OFFICER: To go to the Killingly wastewater treatment plant?

THE WITNESS (Gresock): Correct.

THE HEARING OFFICER: Okay. Staying on the water aspect, my understanding is that there is a powerplant currently under construction in New York state that I think they call the Cricket Valley Energy Center. Ballpark, 1,100 or so megawatts that's coming online.

They're incorporating a zero-liquid discharge system and they're incorporating a rooftop rainfall capture system to provide a supplemental supply of water.

Why not try and incorporate some of those concepts into KEC?

THE WITNESS (Rega): Certainly zero-liquid discharge is something that some plants have had to do under necessity for certain situations.

It is -- it's a very expensive technology and there are issues with reliability in a system like that. Those would be really the two primary reasons, not to -- not to include them here.

THE HEARING OFFICER: So cost and reliability?

THE WITNESS (Rega): I would say primarily, yes. Yes, there may be some space

requirements as well that may be problematic.

THE HEARING OFFICER: Yeah, that I don't know. I just looked at it and said, wow. That's a really neat thing.

All right. Last question I have for you goes back to the hydrogen storage that Mr. Perrone was talking about earlier. Does the amount of hydrogen that you're proposing trigger any, what I call CFAS, which I think is the Chemical Facility Antiterrorism Standards or something like that? Anything there that's required for what you're proposing for hydrogen storage?

THE WITNESS (Gresock): We know that the volume is below the risk-management thresholds established by U.S. EPA.

THE HEARING OFFICER: So if anything, you probably adhere to OSHA standards for general duty?

THE WITNESS (Gresock): That that's correct.

THE HEARING OFFICER: Thank you.

I think I covered my questions and would like to turn to Mr. Lynch to see if he has any at this point.

MR. LYNCH: I do have two follow-up

questions from the past, Chairman, but before I know I want to make a comment.

We on the Council are not allowed to interact with the public during the public session, and there was a gentleman there -- I think he was a professor at Quinebaug, you know, Community College who referenced this proceeding in terms of Nazi Germany.

And I don't know if he was referring to you, the applicant, or us the Council, but I thought the comment was uncalled for and I just wanted to make that statement.

If it was reflective on the applicant, I apologize for that. If it was reflective on us, the Council, we can deal with it. But I just wanted to -- that upset me, and we couldn't -- I couldn't say anything that night, but now that I can I will.

And just a couple of follow-up questions. Again, a lot of it refers back to some of the comments in the public session. And the union representatives had a couple people out that night and they referred to a few times a PLA, a project labor agreement.

Is a project labor agreement in place

with your facility?

THE WITNESS (Eves): Not -- not today.

MR. LYNCH: Is it something you're planning on doing? Yeah -- let me put it this way. Are you negotiating with the unions for that?

THE WITNESS (Eves): When we -- when we started this, this process we did put an agreement in place with the unions that said, this would be a union job. So we've made a commitment to the unions that it will be a union job.

However, at that point we had not selected our EPC contractor, and different contractors have different ways of -- of working with the unions. And we didn't want to tie the hands of our EP -- potential EPC contractors.

We're very close to selecting our EPC contractor. We have -- we would expect that it's going to be a PLA, but they will have to negotiate that with the unions.

And another commitment we've made with the unions is once we select that EPC contractor we will bring in the EPC contractor. We will sit down with the EPC contractor and the union folks that we've been working with to get those -- get

those discussions started.

MR. LYNCH: Thank you. I just wanted to get that on the record, because the union representative inferred that was already in place.

The next question I have regards the powerplant that's being proposed in Rhode Island, and I asked if they have been accepted at the auction and you told me that they weren't.

My question would be -- the auction comes up again, would they be eligible? And could they submit to the auction for the ISO auction?

THE WITNESS (Eves): So that in order to participate in the auction there's -- there's a long period beforehand that new resources have to go through to get approved.

And when you go through this process they look at -- they look at all your costs. They look at your revenues. They look at your -- the status of your permits, they look at your construction schedule.

And then ISO makes a determination, are you approved? They'll set your minimum offer price and they'll make a decision whether they approve you to participate in the auction based on the likelihood that you could actually get to the

finish line, and in the case that we chatted about earlier -- and our case is June 1st of 2022.

So the powerplant over in Rhode Island will have to submit to that same process for both units, and they're currently having some issues over there getting -- getting through all of the regulatory processes.

And that's why, in my opinion, the Rhode Island review -- I'm sorry. ISO New England pulled back that capacity supply obligation because it looked like they were not going to get to the finish line. They were not going to be able to build this plant and get online by the commitment period.

Can the powerplant in Rhode Island apply to ISO New England to get approval for either one or both of those two units? Yeah, sure they can, but what's -- and I'm sure they will at some point in time, but if you look at what's happened over there recently with that facility, I think it's probably unlikely that we'll -- that ISO New England will see them apply to participate in the next auction.

MR. LYNCH: Thank you for giving me an insight into how the ISO operates.

My last question is also a followup, and I remember asking how you were going to purge the pipeline, and you made the comment that you weren't going to use natural gas.

But in my notes I didn't put down anything for how you were going to purge the line, what process you were going to use.

THE WITNESS (Rega): Our ABC contractor would likely use air, compressed air to clean. Compressed air.

MR. LYNCH: All right. Thank you.

That's all, Mr. Chairman.

THE HEARING OFFICER: Thank you, Mr. Lynch.

Do any other councilmembers or staff have any other additional questions?

(No response.)

THE HEARING OFFICER: Great. Hearing none, we're at a good breakpoint, I think, for lunch. Why don't we break for lunch and come back at 1:45, and when we come back we'll continue with cross-examination from the group parties and parties.

Thank you.

(Whereupon, a recess was taken from 12:48 p.m. to 1:45 p.m.)

THE HEARING OFFICER: Good afternoon, ladies and gentlemen. I would like to call the hearing back to order at approximately 1:45 this afternoon. We will continue with cross-examination of the applicant by Connecticut Fund for the Environment, by Attorney Fiedler.

MS. FIEDLER: Thank you. My name is Katherine Fiedler. I am an attorney for Connecticut Fund for the Environment. I'm going to start my questioning with the issue of air pollution.

My first question is, is it correct that the proposed Mitsubishi model will result in higher annual emissions than the previously proposed Siemens model for several pollutants, including volatile organic compounds, carbon monoxide, lead, sulfuric acid, carbon dioxide and ammonia?

THE WITNESS (Gresock): Because of the additional capacity there are several pollutants

that have the potential to emit values that are higher, although all of the modeled impacts are lower across the board.

MS. FIEDLER: Okay. So I understand that it's due to the higher output on the capacity, but overall the annual emission rates will be higher for these pollutants. Correct?

THE WITNESS (Gresock): The additional higher -- the higher firing rates influence that, yes.

MS. FIEDLER: Okay. Is it fair to say that these are additional pollutants that will be experienced by neighboring communities on top of their current baseline air quality?

THE WITNESS (Gresock): The project will be a new, a new source, yes.

MS. FIEDLER: Is it also fair to say that these pollutants would not result in the operation of solar or wind energy facilities if they were sited in the area?

THE WITNESS (Gresock): I'm sorry. I don't understand the question.

MS. FIEDLER: I guess I'm asking if these pollutants would result from solar or wind if they were put in, in the same region?

THE WITNESS (Gresock): So solar and wind do not result in air emissions, yes.

MS. FIEDLER: In DEEP's November 7, 2016, letter on page 2 -- sorry for going so far back in the record -- DEEP states, quote, a blanket statement asserting improvement in local or regional air quality arising from the operation of the Killingly Energy Center is premature. Do you agree with this statement?

MR. LYNCH: Excuse me, Ms. Fiedler? Could speak up? Your voice is fading as you -- continue your questioning.

MS. FIEDLER: Would you like me to repeat that question?

THE HEARING OFFICER: Please.

MS. FIEDLER: In DEEP's November 7, 2016, letter on page 2 DEEP states, quote, a blanket statement asserting improvement in local or regional air quality arising from the operation of the Killingly Energy Center is premature, end quote.

Do you agree with this statement?

THE WITNESS (Gresock): I don't have a position on that statement. Since that time DEEP has issued the air permit for the project.

MS. FIEDLER: NTE asserts that KEC would facilitate the retirement of older, less clean energy producing facilities, improving local and regional air quality. Correct?

THE WITNESS (Hibbard): Yeah, the operation of this facility is likely to put further economic pressure on the less efficient and more expensive units that are operating on the system.

MS. FIEDLER: Are you able to identify with certainty the specific facilities that would retire if KEC is granted the certificate?

THE WITNESS (Hibbard): I would characterize them as any facility that has higher variable operating costs than KEC, which would be virtually every fossil generating facility on the system.

MS. FIEDLER: Will any of these retired or potentially retiring facilities improve the air quality of Killingly itself?

THE WITNESS (Hibbard): It's -- it's possible. There are a number of facilities that would be economically at risk that exist in Connecticut. And so part of the airshed affected by emissions from those facilities could include

Killingly.

MS. FIEDLER: Could you just elaborate on the locations of where those are in Connecticut, potentially the retiring facilities?

THE WITNESS (Hibbard): There are -- it would include virtually any coal, oil or gas-fired facility that currently exists in Connecticut. It would be, you know, in my view it would be potentially further at risk by the operation of Killingly.

MS. FIEDLER: Has NTE obtained offsets for nitrogen oxides at this point?

THE WITNESS (Gresock): Yes.

MS. FIEDLER: And what are the sources of these offsets?

THE WITNESS (Gresock): It's specified in the air permit. Hold on. I'm just pulling that up.

The offset sources are specified as 112.64 tons from the Glenwood combustion turbine facility, and 50.36 tons from National Grid for our Rockaway power station.

MS. FIEDLER: Can you just tell me where these sources are located?

THE WITNESS (Gresock): They're in New

York.

MS. FIEDLER: Do you know how far away these sources are from Killingly?

THE WITNESS (Gresock): I don't have that information.

MS. FIEDLER: Okay. The Tetra Tech environmental overview on pages 10 and 11 lists the permit limits for the operation of the Mitsubishi CTG.

What are the actual projected emission rates for its operation as compared to these permit limits? In other words, do you project KEC to operate at or near these permit limits, or at a margin lower?

THE WITNESS (Gresock): These reflect guaranteed emission rates. Frequently facilities are able to operate at -- at lower levels, but these are the rates that the vendor is guaranteeing.

MS. FIEDLER: And there's nothing to stop KEC from operating all the way up to those limits enumerated in the permit. Correct?

THE WITNESS (Gresock): And DEEP's evaluation has determined that those are acceptable.

MS. FIEDLER: On page 9 of that same Tetra Tech environmental overview it states that the startup VOC and CO emissions for ULSD for the Mitsubishi model are much higher than those for the Siemens CTG. Is this correct?

THE WITNESS (Gresock): They are higher.

MS. FIEDLER: And Mitsubishi was selected in part for its ability to rapidly switch between natural gas and ULSD. Correct?

THE WITNESS (Gresock): That is right.

MS. FIEDLER: Understanding that the air permit delineates limited circumstances for which ULSD may be used, how often is it estimated that KEC will switch from natural gas to ULSD?

THE WITNESS (Gresock): Well, ULSD is limited in use to 720 hours. We won't know how frequently that will occur in actuality until the need arises, but there are very specific limitations in the permit, as -- as we discussed earlier, that relate to the capability of gas to be available to the site.

MS. FIEDLER: Turning to the November 15, 2016, transcript on page 372, lines 1 through 4. Mr. Bradley testified that ULSD would be needed for only very few hours per year, but you

just stated that the limit could be up to 720. Could you explain the discrepancy between those two?

THE WITNESS (Gresock): That is the maximum on an annual basis allowed by the air permit, and it is something that could occur. I believe we do not expect that it would occur that -- that often.

MS. FIEDLER: Okay. And I have one clarifying question on this topic. I apologize if I missed this clarification before.

Comparing table 1 on page 9 of the Tetra Tech environmental overview and the first table on page 6 of permit for the Mitsubishi CTG. For carbon monoxide emissions from the startup of ULSD the Tetra Tech report states 11,004 pounds per hour while the permit states 1,004 pounds per hour. Can you clarify which number is correct?

THE WITNESS (Gresock): I'm sorry. What was the second reference?

MS. FIEDLER: It is the first table on pages 6 for the permit for the Mitsubishi model.

THE WITNESS (Gresock): The 1,004 is the correct number. That's a typo.

MS. FIEDLER: Thank you.

Are the pollutants that will be emitted by the facility associated with potential health problems in neighboring communities?

THE WITNESS (Gresock): The National Ambient Air Quality Standards have been established to protect the public from health problems.

MS. FIEDLER: I'd like to turn to that analysis. I believe it's in volume three of the application. It's likely you don't have to pull that up. So if you do, we can get to that.

So two pollutants in that analysis, nitrogen dioxide and 24-hour particulate matter ceded significant impact levels and therefore required cumulative impact modeling.

Is that correct?

THE WITNESS (Gresock): That's correct.

MS. FIEDLER: Can you explain how this cumulative impact analysis considers health impacts?

THE WITNESS (Gresock): National Ambient Air Quality Standards have been established that protect public health, but the threshold to determine what pollutants should be subject to additional cumulative impact assessment are a

very, very small fraction of that, of that National Ambient Air Quality Standard.

For projects that exceed the -- the threshold to require that, that cumulative modeling in addition to modeling the source there's a cumulative modeling that takes into account the source, takes into account the ambient background air-quality data, and also specifically takes into account other sources that are located in the area.

So even though those other existing sources are already accounted for in the ambient air quality data, it's specifically intended to overstate and be very conservative in terms of how it looks at that cumulative effect.

The cumulative modeling is compared to the National Ambient Air Quality Standard, and also compare -- compared to the PSD increments to make sure that air quality is not being adversely affected.

MS. FIEDLER: And how are the sources selected for inclusion in the modeling?

THE WITNESS (Gresock): The sources were selected in consultation with Connecticut DEEP, and they included sources that were located in

Connecticut and Rhode Island, and Massachusetts. And so there was coordination as well with those regulatory bodies.

MS. FIEDLER: Was the Frito-Lay facility included in this modeling?

THE WITNESS (Gresock): It was not.

MS. FIEDLER: Can you explain why this facility was excluded?

THE WITNESS (Gresock): It would have been excluded based upon the limited emissions from that source that would have contributed.

MS. FIEDLER: Does that source emit nitrogen dioxide and particulate matter?

THE WITNESS (Gresock): I -- I have not looked at that source.

MS. FIEDLER: Okay. Was this ambient air-quality analysis specific to the Siemens model that was included in the application?

THE WITNESS (Gresock): The one you're referencing was specific to Siemens, but subsequent to that time additional modeling has been completed that reflects the current scenario which is the basis of the current permit.

MS. FIEDLER: And under the current scenario, under the new model did any other

pollutants exceed the significant impact levels and require impact modeling?

THE WITNESS (Gresock): They were the same.

MS. FIEDLER: Did NTE conduct any other cumulative impact analyses beyond those required to obtain the air permits that assessed the health impacts and additional burden on neighboring communities?

THE WITNESS (Gresock): We did not.

MS. FIEDLER: I would like to turn to the Town of Killingly's prefiled testimony on page 26. I think it's order number 43.

The commissioner requested that the Siting Council review and consider, quote, additional analysis regarding effective emissions on nearby sensitive receptors, end quote, including an evaluation through the Connecticut Department of Health.

The commission also noted that the Town is concerned with health impacts on children and the elderly because of schools and eldercare facilities located within a two to three-mile radius of the proposed facility.

Can you summarize NTE's response to this

order?

THE WITNESS (Gresock): We do not believe that additional health studies are warranted in this case. The project has had its emissions thoroughly evaluated by Connecticut DEEP who is responsible for upholding air-quality standards.

The impacts of the project as currently proposed are lower than the original Siemens configuration that was approved by Connecticut DEEP. And the impacts that are resulting from the project's maximum impacts are -- are really relatively low. For example, the -- there they're even below that .2 microgram per cubic meter significant impact level thresholds.

Those maximum impacts, as you've seen from the isopleth drawing are located very, very close to the facility. The modeled impacts drop off considerably more from that point.

And certainly part of what DEEP considers in -- and what the U.S. EPA consider in developing their programs and guidelines is protection of public health. That's -- that's a huge basis and it's pretty clear to see that through implementation of the Clean Air Act over

the years air-quality improvements have occurred in this area.

MS. FIEDLER: What was the Town's response to your response to that order?

THE WITNESS (Gresock): So we have been provided a formal response to that, to that order.

MS. FIEDLER: Is this a topic of discussion for your meeting with the Town next week?

THE WITNESS (Gresock): I assume it will be discussed, yes.

MS. FIEDLER: I'm going to turn to the greenhouse gas reduction program. NTE has developed a greenhouse gas reduction program for KEC that would have the facility eliminate its gas emissions by 2050. Correct?

THE WITNESS (Eves): Greenhouse gas, yes.

MS. FIEDLER: Can you explain any mileposts or interim deadlines set to ensure progress for achieving this goal?

THE WITNESS (Eves): And we talked about this before. So we have made a commitment based actually working with the Sierra Club. We cooperated very tightly with the Sierra Club in

coming up with this greenhouse gas reduction program.

So we've made a commitment to line up with the State of Connecticut. We understand and support the -- the big carbon reduction goals here in the State. So we've come up with a program that will allow us to reduce those carbon emissions. We're confident that we can do it through technology, but in the event we can't do it through technology we do have the ability to buy carbon offsets.

We've put together a plan in the voluntary program working with the Sierra Club that had ten years at the current level and then it began to drop off after that, and then we had a year-by-year goal from there through 2050.

MS. FIEDLER: And you stated earlier today that those technologies are close to market, but we do not have those technologies currently available. Correct?

THE WITNESS (Eves): That's correct.

MS. FIEDLER: And I believe you also stated that it's very likely that these technologies would be available for this class of machine. Is that also correct?

THE WITNESS (Eves): Yes.

MS. FIEDLER: So it is not certain that those technologies are currently being developed for this?

THE WITNESS (Eves): That's correct.

MS. FIEDLER: Can these technologies --

THE WITNESS (Eves): I'm sorry. Did you say, it's not certain that they will be available? Or it's not certain that they're being developed?

They are in development -- they're not -- they are in development, but until they're done being developed it's not sure whether they're going to be actually something that can technologically be added.

MS. FIEDLER: And can this technology be used in older gas plants that KEC aims to replace?

THE WITNESS (Eves): Typically these combustion technologies applied to very specific classes of machines. Would there be other technologies that could go into older units and reduce their emissions? Potentially.

MS. FIEDLER: Does this greenhouse gas emissions reduction program require the reduction of methane leakage from the extraction and delivery of gas used for the operation of KEC?

THE WITNESS (Eves): Our greenhouse gas program relates to the emissions from the facility.

MS. FIEDLER: Is NTE investing any financial or human capital to the development of these technologies that will be necessary to achieve these goals?

THE WITNESS (Eves): We're buying the equipment.

MS. FIEDLER: And how is NTE budgeting for the implementation of these technologies?

THE WITNESS (Eves): I would -- I would say the same way, you know, we budget for everything looking to the future. That will be taken care of as -- as technologies become available. We will look at -- we'll look at them in the year that they're available and budget for them at that time.

MS. FIEDLER: And I understand that these technologies are not on the market, so you might not be able to answer this question. But do you have an understanding of the costs of implementing these technologies?

THE WITNESS (Eves): Not today.

MS. FIEDLER: In prior testimony -- I'm

going back again to 2016. On November 15, 2016, on page 523, lines 1 through 7, Mr. Eves, you testified that the actual life of the facility is around 30 years, yet it could be extended to 50 years with appropriate upgrades.

Is this correct?

THE WITNESS (Eves): Yes.

MS. FIEDLER: NTE aims to eliminate greenhouse gas emissions around 30 years into the life of the facility, or around the end of its useful life without better upgrades.

Can you explain how this lifespan will not impact the decisions to invest in greenhouse gas reducing technologies when other significant investments will need to be made concurrently to simply keep the facility in operation?

THE WITNESS (Eves): As we -- as we run the facility over, you know, the next 30 or 50 years we will do maintenance on that facility every year as upgrades are available, put them in during -- during those, those periods.

As -- as these upgrades become available and they give us benefits in efficiency and output in emissions, we -- we will implement them through the budgets that we set year by year for the

facility.

MS. FIEDLER: In response to interrogatory number 35, on page 16 of the Siting Council's interrogatories, step 1, NTE stated that this program is voluntary. Correct?

THE WITNESS (Eves): Yes.

MS. FIEDLER: Are there any consequences to NTE if it does not achieve this goal?

THE WITNESS (Eves): Not under the program that we've put together, however it's a commitment that we've made. I think we're the only one in the industry that has made -- that has made such a commitment. We're going to stand behind this commitment.

And I think by not living to this commitment would be, you know, would, you know, it's not something we are considering. You know, we're making a commitment that we are -- we'll abide by.

MS. FIEDLER: Is this commitment included in either of the air permits obtained for the facility?

THE WITNESS (Eves): No.

Do you want to add more to that?

We actually -- we talked with DEEP about

including it in the air permit, and they said this is -- this is not the kind of program that they would include in the air permit. And actually one of the Sierra Club folks were involved in those conversations as well.

MS. FIEDLER: I understand that NTE has several other facilities. Are there similar emissions reduction commitments for those facilities as well?

THE WITNESS (Eves): No.

MS. FIEDLER: Connecticut General Statutes Section 16-50P, subsection A-1, grants the Siting Council the authority to grant a certificate upon such terms, conditions, limitations or modifications of the construction or operation of the facility as the Council may deem appropriate.

Will NTE ask the Siting Council to condition the certificate on compliance with these greenhouse gas reduction goals?

THE WITNESS (Eves): Sure. I mean, I'll reiterate my position. Because of Connecticut's program to reduce carbon emissions we have made a voluntary commitment that we fully intend to live by and we would -- we have no objection to that

being included as a condition of our certificate.

MS. FIEDLER: All right. I'm switching gears now to water. In the diversion permit obtained by Connecticut Water Company attachment one of NTE's responses to interveners interrogatories, on page 5 the permit reads that DEEP has the right to restrict the diversion if the Commissioner determines, quote, a declared local, regional or statewide drought advisory watch, warning or emergency which necessitates curtailment of nonessential water uses, end quote.

Can you explain how this would affect the operations of KEC if this diversion were to be restricted?

THE WITNESS (Eves): If it happened to be one of those periods of -- of time when we were required to be burning oil, which we think as we previously talked about will be very limited, and they could not provide the quantity of water because of such a curtailment, then it would cause us to reduce load.

We do however have plenty of storage on-site of demineralized water. So depending on the duration of the curtailment it may have an impact. It may not. Sure, one-day curtailment

would not have an impact on our ability to operate.

THE WITNESS (Rega): Water even perhaps up to two days.

MS. FIEDLER: Do you have storage on site for two days of water usage?

THE WITNESS (Rega): Approximately, yes.

MS. FIEDLER: Okay. Thank you.

And I understand that the use of the diesel source is most likely to occur during extreme cold weather. Is this correct?

THE WITNESS (Eves): I would say yes.

MS. FIEDLER: Or it's possible that this fuel source could occur, the need for this fuel source could occur at any time. Correct?

THE WITNESS (Eves): That is correct.

MS. FIEDLER: Can you explain how Connecticut Water Company's analysis of adequate margin of safety considered concurrent drought and a diesel use, and its corresponding water need?

THE WITNESS (Eves): No, I can -- I cannot explain that. I do know that they ran the analyses, but I cannot explain how that was done or what they considered.

MS. FIEDLER: Okay. In appendix H-1 on

page 1 of the July 29, 2016, correspondence from Connecticut Water company, Mr. Radke writes, quote, because supply availability of any system is finite an annual review of Connecticut Water's ability to serve the project will need to be conducted on the one-year anniversary date of this letter and every year thereafter until the project is complete, end quote.

To your knowledge, has this annual review been conducted?

THE WITNESS (Eves): I know that they've done a lot of analysis. I'm looking at their system and -- and figuring out how they provide this water to us with the appropriate margin of safety.

Specifically that analysis? I can't tell you.

MS. FIEDLER: Okay. I was going to ask, who was this provided to and what form it's in, but it sounds like you don't know.

Should the annual review in the future determine that Connecticut Water can no longer serve the project, can you explain how that would impact the operation of the facility?

THE WITNESS (Eves): I think that that

scenario is very unlikely, but if we don't have water we can't operate.

THE WITNESS (Gresock): If -- if that was in appendix H-1 of the original application that correspondence would have been prior to the agreements that have been entered into at this point.

So I'm sure that the agreements have a term to them, and analysis has been done in order for them to make that commitment.

THE HEARING OFFICER: I'm going to interrupt you for one second. Mr. Lynch has a question.

MR. LYNCH: I think this came up before, but in the event that Connecticut Water Company is purchased by another water company does your contract still stay in agreement?

THE WITNESS (Eves): Yes. Yeah, it -- it would transfer to the new owner.

MR. LYNCH: So it follows your contract. Thank you.

Thank you, Ms. Fiedler.

THE WITNESS (Eves): And I would like to add, I mean, Connecticut Water Company has several well fields that are not fully developed. So they

have -- they have a significant quantity of water that's still available on permitted well fields that have not yet been developed.

MS. FIEDLER: In NTE's Late-File Exhibit Number 2 submitted on April 11, 2019, NTE reports that Connecticut Water Company's updated water supply plan did not include any projections associated with KEC as of May 2018.

Is this correct?

THE WITNESS (Eves): That is correct, however their calculations were very conservative and I have actually -- I'm sure I have --

Do you have that, Chris? The letter from --

I know they -- they've done very conservative estimates. I believe it's -- of course, I would have to check to confirm, but I believe that Putnam has, you know, they've got a significant quantity of water allocated to Putnam who does not typically -- I mean, they're taking about 10 percent of that value.

So after they've done a very conservative calculation -- and then they look at the other margins in their system. They have confirmed to us in writing that they can provide

that water and still achieve the margin of safeties that they're required to provide.

MS. FIEDLER: And to confirm, that water supply does cover a five-year planning period?

THE WITNESS (Eves): Hang on just a minute. I know I've got it here.

So, yes. I -- I am not aware of their planning period, but our -- but our service contract with Connecticut Water covers a 20-year period with extensions.

MS. FIEDLER: Okay. I think that's the last question I have.

THE HEARING OFFICER: Thank you, Attorney Fiedler.

I'd like to have the group parties come up, including Attorney Mintel.

MS. CSANK: Your Honor, at the appropriate time I would like to request a very brief break. I think it will help streamline questions based upon the answers just provided to Ms. Fiedler.

THE HEARING OFFICER: What would be an appropriate time?

MS. CSANK: Well if your Honor wants to -- I wasn't sure if there was any other

procedural matters we were about to address, but now would be a good time. And if we may ask for 10 minutes, that would be very helpful?

THE HEARING OFFICER: How about five?

MS. CSANK: Respectfully in order to use the restroom and streamline the questions, ten minutes would be more apt.

THE HEARING OFFICER: We'll adjourn for ten minutes.

MS. CSANK: Thank you, sir.

THE HEARING OFFICER: Thank you.

(Whereupon, a recess was taken from 2:14 p.m. to 2:24 p.m.)

THE HEARING OFFICER: Attorney Baldwin, is your panel all set?

MR. BALDWIN: We are. Thank you.

THE HEARING OFFICER: Thank you. All right. We'll call this hearing back to order and we will begin with cross-examination by the group parties.

You have one microphone. So depending upon who might be speaking, just orient it in the appropriate manner.

MS. CSANK: Yes, sir.

This is Diana Csank, spelled C-s-a-n-k, for Sierra Club. Good afternoon. For the clarity of the record I'd like to go over some key terms that I'll be using in my examination.

I believe the project has been referred to throughout this proceeding as KEC. Unless I say otherwise I will be referring to KEC when I say the plant, or the project -- if that's clear?

And similarly, when I say you, I mean, the company, the applicant.

I heard the term "ratepayers" used this afternoon. I prefer to use customers, or the public. So those should be understood to be synonymous.

And I also heard the term "natural gas" used throughout this proceeding, and I will not be using that term for the most part. I will be simply saying gas, and as appropriate shale gas and other variations on that.

One more request just for expediency of the examination. Many of my questions will call for a yes or no, or I don't know answer. If you would please start with a yes, no, or I don't know before explaining as needed? I think that will

expedite the examination.

MR. BALDWIN: We will do our best, but a lot of questions that are often posed as yes or no require an explanation. So we'll do our best.

MS. CSANK: Thank you. That's all I can ask.

So I'd like to begin with a question, or a line rather, for Mr. Hibbard. And please give me the signal if I'm not sufficiently audible. I like to turn to the witness when I ask them questions, but I realize that poses a challenge with this setup.

THE REPORTER: I'm not having any difficulty hearing you.

MS. CSANK: Great.

THE HEARING OFFICER: If you're uncomfortable, if you want to switch and go in the middle then you've got a perfect angle.

MS. CSANK: Let me do that.

Mr. Hibbard, generally speaking it is your testimony that there is a need for the project. Correct?

THE WITNESS (Hibbard): There is a need for the project, yes.

MS. CSANK: And is that based on any

independent analysis by any agencies below?

THE WITNESS (Hibbard): It's based upon extensive analysis by the independent system operator in administration of a forward capacity market that is used to acquire resources needed to maintain the reliability standards.

MS. CSANK: Any other agencies besides the ISO?

THE WITNESS (Hibbard): I believe most state public utility commissions are pretty actively involved in all of the vetting of the various models and analyses that are used to establish the install capability responsibility, which is ultimately what determines which resources are selected to meet the reliability needs.

And I should mention that the reliability needs themselves are an indication of enforceable federal standards that are overseen by FERC and then administered by NERC, and the NPCC and ISO.

MS. CSANK: Okay. That was a robust answer. Thank you. I believe that the call of my question was simply whether other agencies were involved in the need determination specifically

for this project. And is the answer, yes? No? I don't know?

THE WITNESS (Hibbard): Can you just explain what you mean by agencies?

MS. CSANK: Government entities, let's say.

THE WITNESS (Hibbard): Yeah, so -- and my answer is, at least in my experience as a commissioner in Massachusetts and what I observed of all the states is they are very active participants in all of the various pieces of analyses that lead to ISO, through its own comprehensive modeling, indicating what is needed to meet the federally enforceable reliability standards.

So in my -- in my view there are an awful lot of agencies that are part of the process that leads to when the forward capacity market is actually administered. The resources that are obtained are the resources that are needed for reliability.

MS. CSANK: Thank you. And we'll get into that process that the ISO uses and what the CSO means -- and I will try to avoid acronyms as much as possible so that we're speaking in English

with each other.

But in terms of just to clarify for the record what I think we just established is that there is no other process besides this system operator process through which the company has obtained a capacity service obligation that reviews need.

Is that correct?

THE WITNESS (Hibbard): No. Again -- and I'm not trying to be difficult. I actually think that the process that sets the reliability needs which is the basis for securing resources to meet that reliability need is extensively overseen by the federal government, by the FERC, the Federal Energy Regulatory Commission.

The level of resources procured to meet reliability needs both stems from required steps that the system operator in New England must take to identify what the quantity of need is, and then -- no. Just let me finish the answer.

And then FERC approves that quantity, and then ultimately FERC sanctions the outcome. So I -- I think there's extensive federal oversight of the process that leads to the determination of resources that are needed to meet

federal reliability standards.

There's no state agency process I'm aware of that ISO needs to go through in order to get approval of those things, but all of the New England states are extremely active in all of the processes. And generally as agencies submit comments to FERC often with respect to whether or not they believe the ICR is the correct number and various things like that.

So I -- I just don't want to leave the impression that government agencies are not actively involved in the process that leads to the selection of resources needed for reliability.

MS. CSANK: If I may just help us understand, again this -- this detailed recitation by you, what we've established on the record is that there's one complex process whereby you obtained the capacity service obligation for this project. Correct? Yes, no, I don't know?

THE WITNESS (Hibbard): There is a process that leads to a determination of what resources need to be available to meet federally enforceable reliability standards. The end result of that are capacity supply obligations.

The end result of that whole process is

a set of existing and new resources with capacity supply obligations. Those resources need to perform pursuant to those obligations to maintain that level of reliability.

MS. CSANK: Sir, forgive me, but I really do think -- maybe it's because I'm not as experienced as you, but it would really help me if you answer the call of my question. You didn't say yes, no, I don't know. You elaborated on this process.

And if I would just beg your indulgence and ask the reporter, sir, would you please read back that question?

THE HEARING OFFICER: Well, actually let me interject on this one. I think you're going to find as we talk about electricity in general that it's a very, very complex process and some things you're not going to get a straight yes, no or maybe-type of answer without an explanation going forward.

So I'm hearing the explanation coming through and I really think it does answer your question, that perhaps you might want to rephrase it slightly to get to what you're looking for.

But overall I think you're going to get

yes, no, but there's going to be some type of explanation or other words that are going to go along with it to try to explain that answer, because as he stated and the applicant stated, it is complex.

MS. CSANK: Granted, Your Honor. What I'm simply trying to establish -- and in my experience, humbly it works rather well is if right after I ask the question if the witness says, yes, no, I don't know, and then explains, the record reads much clearer and everyone can proceed clearly.

Otherwise I have to keep tripping over myself to repeatedly go at it in different ways until I get a yes, no, or, I don't know -- because the explanation tends to be rather long.

THE HEARING OFFICER: It could be long but I think you're getting your answer -- but let's continue.

MS. CSANK: All right.

Sir, besides the capacity supply obligation and various processes that you've identified that wind up into it, is there any other need analysis performed by a third-party other than the applicant that's in the record

today?

THE WITNESS (Hibbard): Not that I have seen. I mean, I -- so with that -- so the answer -- so the answer -- the answer is, no, I have not seen anything in the record other than what the applicant has identified as obtaining a CSO to meet the reliability need in the New England region.

I personally testified that there are also other reliability benefits, but in terms of the determination of need that is limited to this process we have been discussing, the applicant obtaining a capacity supply obligation through this process -- that we have discussed.

MS. CSANK: What is a reliability supply benefit?

THE WITNESS (Hibbard): I am not familiar with the term.

MS. CSANK: I believe you just used it, sir.

THE WITNESS (Hibbard): There -- I said there are other reliability benefits associated with the facility.

MS. CSANK: And how would you define reliability benefits for the record?

THE WITNESS (Hibbard): I would define them as characteristics of the operation of the powerplant, of the KEC powerplant that help meet various elements of that related to power system reliability in New England.

MS. CSANK: So is there a standard methodology that you're applying that's documented in the record for identifying such benefits?

THE WITNESS (Hibbard): There are a number of documents in the record that describe the reliability benefits of various sources of power, and those are what I'm referring to.

The provision of ancillary services, the ability to help the system operator meet variations in load on a second-by-second, hour-by-hour, day-by-day basis. You know, the -- as we discussed prettily extensively, the ability of the unit to increase the level of fuel security in the region, the -- being a generating resource located close to load helps provide voltage support.

These are all things that documents in the record from ISO New England and from NERC, the Northeast Electric Reliability Council identify as reliability benefits of various generating

sources.

And that's what I'm referring to when I say, reliability benefit. I do want to be clear that when I say, need, it's related to their acquisition of capacity supply obligation through the forward capacity market.

MS. CSANK: Please explain that last statement. Why is that significant in this case?

THE WITNESS (Hibbard): That's what we've been discussing up to this point, that KEC obtaining a capacity supply obligation means that the unit is needed to meet the power system reliability, and meet reliability in a way that's consistent with what the system operator has done pursuant to federal reliability standards.

MS. CSANK: Okay. And when you referred to these various documents in the record that identify all these various reliability benefits, are any of those specifically evaluating the project and its ability to deliver such benefits?

THE WITNESS (Hibbard): No. I -- what I said was that the -- those documents identify characteristics of powerplants that are important for maintaining power system reliability, and KEC actually has most of those characteristics.

MS. CSANK: And it's not your testimony, but it's the only possible option for Connecticut to achieve such benefits. Correct?

THE WITNESS (Hibbard): I don't believe I have claimed that.

MS. CSANK: And how would you know if it were the only such option?

THE WITNESS (Hibbard): If there wasn't a single other entity on the planet offering to build the powerplants to meet the need that has been identified, than it would be the only one. But that's -- I don't know if that helps answer the question.

MS. CSANK: Do you recall a conversation we were having earlier this morning, not me, but others on this panel concerning the possibility of a delay and the implications for the company's capacity supply obligation?

Do you recall that conversation?

THE WITNESS (Hibbard): I -- I recall a discussion about -- yes. I recall a discussion about -- I don't recall which, but things possibly delaying the operation of the facility.

MS. CSANK: And maybe this is the correct time to say it -- and certainly if Mr.

Eves would like to address this line, but basically my line is this.

If there were such a delay that prevented for whatever reason the applicant from having in service the project by June of 2022, do you have any analysis that indicates there would not be other supply options that could be procured on a short-term basis?

THE WITNESS (Hibbard): To the contrary, I believe Killingly has an obligation to make sure that its capacity supply obligation is met. So if for some reason there was a delay they would be obligated to participate in -- in subsequent annual auctions to replace the capacity that it otherwise would provide.

MS. CSANK: And as we sit here today the applicant is confident that it can meet that contingency and satisfy that, that obligation that it has?

THE WITNESS (Hibbard): Well, they -- there is established -- there are established regional market rules that govern how that's done. So they don't have an alternative.

They would have to -- if they have a capacity supply obligation, if the plant is not

available there are steps that they have to take pursuant to regional market rules to make sure there's -- there are other resources to meet that capacity supply obligation.

The second part of the answer is that there's a whole regional market process to make sure that those resources come forward. It's not that Killingly would have to go out and find a specific resource. They would participate in an auction process that would ultimately identify the resource that replaces the CSO.

MS. CSANK: So let's say, in a hypothetical case where this project is denied, then it sounds as though you could go to the market and there would be capacity, and there would be resources.

And they would be available to meet this identified need, a need identified to be clear, not in this year, but in the past and there's going to be subsequent updates to the analysis that the system operator performed. Correct?

THE WITNESS (Hibbard): I'm not quite sure I understand the question. There's a process --

MS. CSANK: Let me break it down because

that was -- strike that question. That was an unfair question.

So you're with me with the predicate here that we have a denial of the project. Yes?

THE WITNESS (Hibbard): No, I don't think the Council has ruled yet.

MS. CSANK: That's why it's a hypothetical. I believe there's a lot of speculation that we've heard today. So if you would just indulge me in a little bit more speculation.

In this scenario where the project were denied there is no analysis in the record that you know of. Correct? That indicates that the company could not go out to the market and find short-term resources to meet that obligation. Correct?

THE WITNESS (Hibbard): I haven't -- I'm not aware of anything in the record that suggests that what the outcome would be if the project was denied.

MS. CSANK: And for what term? Is there no shortage of other options on the market?

THE WITNESS (Hibbard): I'm not sure I understand the question.

MS. CSANK: So how long could we go on without the project and still meet the capacity supply obligation that the company has? Do you know?

THE WITNESS (Hibbard): I'm sorry. I'm -- and again, I'm not trying to be difficult. I still don't quite understand the question that you're asking.

MS. CSANK: So there's a certain supply obligation the company has incurred. Correct?

THE WITNESS (Hibbard): It was -- it has a capacity supply obligation because it cleared this capacity market.

MS. CSANK: And what that means is whether or not the project is built that obligation has to be fulfilled. Correct?

THE WITNESS (Hibbard): They're the only ones with their capacity supply obligation. The -- there is a process that happens annually as part of the regional market to find the resources that are needed to meet the identified reliability need.

MS. CSANK: And what's the term? Just please remind us of the obligation that the company currently has?

THE WITNESS (Hibbard): They have a capacity supply -- supply obligation.

MS. CSANK: Of how many years?

THE WITNESS (Hibbard): Oh, seven years.

MS. CSANK: Thank you. And so as we sit here today do you know whether it can meet that obligation every year of those seven years without the project?

THE WITNESS (Hibbard): I -- are you asking whether or not they could meet that for seven years without the project?

MS. CSANK: Yes.

THE WITNESS (Hibbard): I would assume so. I would assume that that -- that would be their obligation pursuant to market rules.

MS. CSANK: So that's an assumption. You haven't performed any analysis?

THE WITNESS (Hibbard): I have not performed any analysis that goes out for the seven years subsequent to '22/'23 to determine what would happen under various scenarios, no.

MS. CSANK: The company never asked you to analyze that, in other words?

THE WITNESS (Hibbard): That that's not -- they had not asked me to do exactly what I

just said, no.

MS. CSANK: Thank you. And then an analysis can be done, though. Correct?

THE WITNESS (Hibbard): You would have to explain a little bit more exactly what analysis you have in mind, but --

MS. CSANK: Sir, you're the expert. So you know, please illuminate us if such analysis is feasible.

MR. BALDWIN: I think the appropriate thing, Mr. Chairman, is that she asked the question and we gave the answer.

THE HEARING OFFICER: Yeah, and I'm trying to figure out myself what the exact question is that you're trying to pose.

It sounds like -- but I don't want to put words in your mouth. It sounds like you're asking them if they're going to fulfill the contract if the Council denies this application.

MS. CSANK: Yes, your Honor.

THE HEARING OFFICER: Try to phrase it that way and maybe it will make sense.

MS. CSANK: Sir, you have a contract to supply a certain amount to the market. Correct?

THE WITNESS (Hibbard): As a result of

the forward capacity market NTE currently is obligated to meet their capacity supply obligation in 2022/2023.

MS. CSANK: And what is the size of that capacity obligation?

THE WITNESS (Eves): 631 megawatts in the summertime.

MS. CSANK: And so in winter is there a difference?

THE WITNESS (Eves): You know, we'll produce more power in the winter. Our commitment is a 631 megawatts.

MS. CSANK: Thank you. And so my question is simply, what kind of analysis can be performed to verify whether in each year of the contract the company can fulfill the contract if the Council were to deny the project as proposed?

THE WITNESS (Hibbard): The -- the company is obligated to participate in subsequent auctions. If for some reason, if -- if the Council denies the company's application they will have to participate in those subsequent auctions to make sure that the capacity, the full capacity supply obligation is addressed.

MS. CSANK: Besides the auction, is

there any other analysis that can be performed to verify that the company can fulfill its capacity supply obligation for the term of the obligation?

THE WITNESS (Hibbard): Not that I'm aware of.

MS. CSANK: And since you're not aware of any such analysis, you certainly didn't perform such analysis. Correct?

THE WITNESS (Hibbard): I think as I previously said, I was not asked to perform analysis like that.

MS. CSANK: Do you think it's prudent to enter a contract without having analysis performed to reasonably assure the contracting parties that they can fulfill their obligations?

MR. BALDWIN: Objection. Mr. Hibbard is not in a position to answer for the company, nor do I think it's an appropriate question.

The record is clear in this case, Mr. Silvestri. The CSO has been issued. We can talk speculatively about all these other hypotheticals, but I don't think it's appropriate in these circumstances to be going down those roads. The record is what it is.

THE HEARING OFFICER: Yeah, I'll agree

that the record is what it is. I'd like to move on, on this one and get onto more concrete if we can.

MS. CSANK: Certainly, your Honor.

If I may just very briefly address distinguished counsel's comment?

The capacity supply obligation is squarely before you in this matter, and me simply probing the implications of that is, I would submit and strenuously maintain is highly relevant to the decision here, and I should be allowed to ask questions.

So to the extent that I'm unable to do so further I will at this time launch an objection. However, I will proceed to a slightly different but related line with respect to the various reliability benefits that Mr. Hibbard has identified that, if I'm correct -- understanding correctly are he is distinguished from the capacity supply obligation and the, quote, unquote, need that that represents. Correct?

These are different things, the reliability benefits and the capacity supply obligation?

THE WITNESS (Hibbard): The -- what I

referred to as additional reliability benefits were above and beyond what the capacity supply obligation is, which is essentially meet summer peak demand with 631 megawatts of capacity from the facility.

MS. CSANK: And we can agree that other resources, including other gas combined cycle units can provide such benefits. Correct?

THE WITNESS (Hibbard): The -- so the one-word answer is yes, but the explanation is that on an annual basis the end result of the forward capacity market process is the identification of the least cost set of resources that in total meet the entire region's installed need, their reliability need, net ICR.

And there are many other resources other than this facility that participate in that auction process, and a subset of which is selected to be -- and granted capacity supply obligations in order to meet that need.

MS. CSANK: Okay. And just to be clear, if for some reason the conditions imposed upon this project were to reduce its capacity output, it would still be able to provide such benefits. Correct?

MR. BALDWIN: Conditions imposed by whom?

MS. CSANK: By this Council.

MR. BALDWIN: So the question is, if this Council were to impose capacity limits --

MS. CSANK: May I clarify? I'll strike my question and go at it another way.

If the Council were to condition its approval in such a manner that the capacity output of the project were reduced, would the project still be able to provide these reliability benefits that you have identified, sir?

THE WITNESS (Hibbard): If the -- if the unit for one reason or another had available capacity less than the 631 megawatts, number one, the difference would have to be made up. I just -- I want to give a complete answer.

The difference for the CSO purpose would have to be made up in the same way we were previously discussing, in the forward capacity market auctions. The remaining portion that the facility is able to operate would still be able to provide all of the reliability benefits that I identified.

MS. CSANK: Thank you. And wouldn't the

same be true if the conditional approval by the Council were to delay the construction of the project, all else being equal?

THE WITNESS (Hibbard): I think as we've discussed, the company's obligation is very explicit. It's in '22/'23. It needs to be -- it has a capacity supply obligation for 631 megawatts. If it's not available on June 1, '22/'23 then all of our previous discussion applies.

MS. CSANK: So sir, I just think it will be clear for the record -- I'm not asking about the capacity supply obligation. At the beginning of this line we established that the additional reliability benefits are additional above and beyond the cost of supply obligation.

So if you would just bear with me and answer the call of the question I think we'll get through it faster.

And so my question was simply this. If the conditional approval by this Council were to result in a delay of the in-service date of the project, would the project still be able to deliver reliability benefits to the people of Connecticut?

THE WITNESS (Hibbard): At the time it commenced operation, yes, but not in the period of time between when they wish to go online and when they do go online. If it's not operating it can't provide those reliability benefits.

MS. CSANK: Thank you, sir.

And as we sit here today, nothing in the record says that there is a reliability shortfall in Connecticut. Correct?

THE WITNESS (Hibbard): There is nothing in the record that explicitly says there's a reliability shortfall in Connecticut, however the reliability need in Connecticut is a function of what happens in regional market processes, and that's what we've been discussing.

MS. CSANK: And so is there anything in the record that says as we sit here today, a reliability shortfall existing or projected in the regional market?

THE WITNESS (Hibbard): The --

MS. CSANK: Yes? No? I don't know, sir?

THE WITNESS (Hibbard): Well, it doesn't lend itself to a yes, no, I don't know answer. I do know I would answer and I -- just for the

benefit of the Council I think it's the -- the process that leads to capacity supply obligations being issued for the full range of powerplants in the region that meet that need is the process that determines what resources are going to meet federally enforceable reliability standards three years out.

And so you can't point to any particular state within the region and say, there's a need in this state but not a need in another state. That each state relies upon the generating facilities that participate in the forward capacity market throughout the entire region. So reliability in Connecticut is dependent upon generation in Connecticut and throughout the entire region.

Similarly generation in Connecticut provides reliability benefits to other states in New England. That's just the structure of our tightly integrated power grid in a tightly integrated power market.

So I -- I just want to be clear that when you speak about a reliability need within Connecticut, it's more complex than -- than looking specifically at one state.

THE HEARING OFFICER: Mr. Lynch has a

follow-up question for you.

MR. LYNCH: Mr. Hibbard, following up on what you just said -- all powerplants throughout New England are running, and is there any likelihood that the ISO would call for a dispatch less than 330 -- I mean, 631 megawatts from your powerplant?

THE WITNESS (Hibbard): The -- the answer is -- the answer is that, yes, at -- in any given hour throughout the year any powerplant in the region could be operating at full capacity or something less than full capacity.

What the ISO calls for is based upon hourly economic dispatch. So it really depends on how do you minimize the hour-to-hour cost to consumers, to ratepayers and to consumers.

MR. LYNCH: So peak times you could be running at full capacity, and in less peak times you could be running it less?

THE WITNESS (Hibbard): Yeah, and you know, my expectation is this facility being more efficient than most other fossil generating facilities in the region because it will have a really high capacity factor.

MR. LYNCH: So that leads me to my next

question. Does the ISO provide a priority of dispatch?

THE WITNESS (Hibbard): The ISO determines what units operate in each hour based on an increasing variable cost curve.

So it's literally based upon how much does it cost to generate a megawatt hour. So yeah, it's an increasing supply curve.

MR. LYNCH: Thank you very much.

Thank you.

THE HEARING OFFICER: Thank you.

Please continue.

MS. CSANK: Thank you.

Since we're talking about dispatch, now is probably a good time to return to a question from this morning about decarbonization and the various methods to achieve decarbonization. And I believe in the context of that conversation certain bolt-on technologies were discussed.

Mr. Eves, do you recall that?

THE WITNESS (Eves): Yes.

MS. CSANK: And for the clarity of the record could you please define bolt-on technologies as you understand them?

THE WITNESS (Eves): That would be a

technology that can be added to an existing machine without -- that could -- I'll just leave it at that. It's a technology that could be added to an existing machine.

MS. CSANK: So it's within the fence line of the facility. It's on the site that we're discussing. Correct?

THE WITNESS (Eves): Yes.

MS. CSANK: As opposed to measures beyond the fence line that also might also result in emissions reductions. Correct?

THE WITNESS (Eves): When I speak of bolt-on, yes, it would be in, inside the fence line.

MS. CSANK: And so I'll link this up to dispatch in a moment, but to be clear I think Ms. Gresock identified for us that, for example, resources such as solar and wind, and certainly others do not produce emissions when they are operating and producing power supply.

Is that correct?

THE WITNESS (Gresock): That's correct.

MS. CSANK: And also I think it would be better for the record to just establish that approximately 80 percent of the cost of building

and operating a gas plant are fuel costs. Correct?

THE WITNESS (Eves): I think that's a difficult question. Building -- yeah, there's no gas cost at all included in building the -- the facility. I would say operating the facility, the gas costs are a significant contribution to the costs.

MS. CSANK: Do you have any qualified analysis to present to the Council?

THE WITNESS (Eves): Not right now. I don't have that.

MS. CSANK: So subject to check, would you accept that in other gas plant matters states have consistently found that about 80 percent of construction and operating costs of such facilities are fuel costs.

THE WITNESS (Eves): I'm sorry, but I can't -- I can't -- I mean, I would have to look it up, but I -- I can't.

MS. CSANK: You don't know. Is that correct?

THE WITNESS (Eves): I don't know. Yeah, there you go. Yeah.

THE HEARING OFFICER: If I could

interject on that? I believe that Mr. Eves said the gas cost doesn't factor in on construction.

MS. CSANK: Right. And so --

THE WITNESS (Eves): That's correct.

MS. CSANK: -- what I was suggesting was that the denominator would be the construction and operation costs combined. And I was searching for the numerator, if they knew it. And I think the record will show that they do not know it.

THE HEARING OFFICER: And we'll leave it at that.

MS. CSANK: Thank you, sir.

And just to be clear, resources such as renewable resources, solar and wind do not have fuel costs. Correct? Yes, no, don't know?

THE WITNESS (Eves): No, they do have fuel costs, because we need power 24 hours a day. And when the -- when the solar is not operating, when there's no wind, when there's no sun that power has got to come from somewhere. And that, that power is going to come from some facility that uses fuel.

I would say during the hours of the day that solar is operating there's no fuel associated with it, but if you look at that power over a

24-hour period there's going to be fuel required to back up, to provide the power that that solar facility would provide.

MS. CSANK: Sir, do you have any written analysis that says -- well, first of all, the call of my question was simply when solar and wind operate do they have a fuel cost? And I believe the answer is, no.

Is that correct?

THE WITNESS (Eves): I don't think that was your question, but yeah, when sol -- when solar and wind operate there are no fuel costs associated with those resources.

MS. CSANK: And what is your basis for suggesting to the Council that fossil-fueled resources must be combined with solar in order to reliably serve customers?

THE WITNESS (Eves): Because the sun doesn't shine at night and the wind doesn't blow all the time. I mean, we have to get that power from somewhere.

Battery technology is a long way off on the horizon. Someday maybe it will be here, but there, I mean, those variable resources have to be backed up. That's -- and that's, you know, Paul

talks about reliability benefits. That's one of the huge reliability benefits of this machine, is its flexibility to be able to provide power when the variable resources are unavailable.

MS. CSANK: Sir, are you aware that there are jurisdictions that have completely phased out their fossil fuels and supply their customers with affordable, reliable and adequate energy?

MR. BALDWIN: Objection. Relevance? Is there a question.

THE HEARING OFFICER: I would stay with the project itself with your questions, please.

MS. CSANK: Yes, your Honor. I believe that this line of questioning is highly relevant to the earlier questioning concerning decarbonization and the methods to achieve the State's decarbonization goals.

And so I was simply exploring the feasibility of other methods that may be available indeed to this applicant of advancing those policy objectives of the State.

THE HEARING OFFICER: I'm not sure where you're going, but please pose your next question.

MS. CSANK: If I can have just a tiny

bit of latitude to ask a couple more questions and we can move on?

So in a dispatch stack isn't it true that renewable energies tend to be dispatched earlier than fossil-fueled energies?

THE WITNESS (Hibbard): I think the answer to that is, yes, most renewable resources would be dispatched before gas-fired resources with the potential exception of biomass resources. We consider that renewable.

MS. CSANK: I'll put that aside for now as --

THE WITNESS (Eves): Maybe I could add something. Renewable resources are not dispatched. I mean, you can't turn a renewable on and off when you want to turn it on and off. Dispatch means that you can turn the power production facility on when you need it.

When renewables produce, their power goes to the grid. When renewables don't produce you need to dispatch a unit that you're capable of turning on and off to meet the power needs.

MS. CSANK: Sir, I don't think we need to get into the details. But thank you for that, but I don't think we need to get into the details

of dispatchability of solar, and solar combined with storage technologies.

In any event, the next question that I had was going to tie back to a conversation that we had this morning concerning the feasibility of adding solar to the site.

Do you recall that?

THE WITNESS (Eves): Yes.

MS. CSANK: And so sticking with that scenario, if the company were to discover that some amount of solar could be added to the site, would it not limit in some material way the dispatch of the unit when the solar is supplying grid?

THE WITNESS (Hibbard): I think the answer to that question would be no, because what that solar would do is it would limit the operation of some unit, but it would limit the operation of a unit that's out on the margin. So that's not likely to be this facility in many hours of the year.

It's more likely to be one of the less efficient older facilities, whether it's gas-fired, oil or otherwise. So it's correct I believe that if solar were added, it would limit

the operation of other fossil-fueled resources, but not likely this one.

MS. CSANK: So let's just put aside your claim that it wouldn't be the marginal unit and fast-forward to a time when it is, just so that the record is clear about this dynamic. At that time that additional solar would, in fact, curb the emissions from this very project.

Correct?

THE WITNESS (Hibbard): If this facility were on the margin then every additional megawatt hour of solar would back a megawatt hour off of that facility.

MS. CSANK: And so could we call that a beyond the fence line measure for further reducing the emissions of the project?

THE WITNESS (Hibbard): I -- any -- any investment that would -- that would cause this project to operate less and allow another resource to operate that didn't produce any emissions would be an example of something that would reduce the emissions associated with the operation of the facility.

MS. CSANK: And Mr. Eves, when you were discussing potential future controls -- and I

believe you explained that what you were referring to was exclusively the controls, bolt-on controls that are under development by Mitsubishi.

Is that correct?

THE WITNESS (Eves): Yes.

MS. CSANK: And so you haven't analyzed the feasibility at this time or some future time of these other types of emissions reductions methods. Correct? Ms. Gresock?

THE WITNESS (Gresock): I think there are a range of options that could be feasible in the future, and they're not simply limited to technology changes at the facility. I think there are a lot of ways for the project to meet its commitment.

MS. CSANK: Okay. Well, let's tease that apart a little bit. So I believe in talking to Ms. Fiedler, Mr. Eves, you identified a willingness by the company to make its greenhouse gas commitment binding in some manner.

Is that correct?

THE WITNESS (Eves): Yes.

MS. CSANK: And specifically you identified requesting that that be made a condition of approval. Correct?

THE WITNESS (Eves): I didn't request that. I did say we would be perfectly willing to accept that as a condition of our certification.

MS. CSANK: Will you go one step further and request that it be a condition of certification?

THE WITNESS (Eves): Sure. If you'd like to make that a condition of our certification we will gladly accept.

MS. CSANK: And just so that the record is clear, it's the company's position that there are a variety of technologies including some in development that would bolt on or be beyond the fence line that enable it to meet its commitment.

Correct?

THE WITNESS (Eves): That's correct.

MS. CSANK: And the emissions we're really talking about here are exclusively those from the stack of the plant. Correct? Or stacks?

THE WITNESS (Eves): Yes, I believe we're talking about CO2.

MS. CSANK: Not just CO2. I mean, to be clear this is gas that will be extracted and transported to the site. Correct?

THE WITNESS (Gresock): This, this is

based upon the project's direct impacts only.

MS. CSANK: And so indirect impacts by contrast would be emissions that occur upstream such as at the extraction stage of the gas and the transportation of that gas. Correct?

THE HEARING OFFICER: I want to take a step backward.

Mr. Eves, just to go back on what you're voluntarily proposing, the voluntary proposal was for carbon dioxide only. Is that correct?

THE WITNESS (Eves): Yes.

THE HEARING OFFICER: Thank you.

Then your continued question was?

MS. CSANK: I was simply trying to make clear for the record that there are emissions upstream that are often referred to, by environmental regulators, as indirect impacts.

And those include -- and I'm sorry to go on so long -- the emissions from extraction and transportation of gas to the project.

THE WITNESS (Gresock): So the -- the commitment is based solely on the carbon dioxide equivalent values that were reflected in the project's air permit.

MS. CSANK: And you agree that there are

impacts from those extra emissions that I just described. Correct?

THE WITNESS (Gresock): I have no position on that.

MS. CSANK: You have not performed any analysis on those extra emissions?

THE WITNESS (Gresock): I have not.

MS. CSANK: Do you know if it's feasible to quantify those extra emissions?

THE WITNESS (Gresock): I have not considered it.

THE HEARING OFFICER: I'm not sure how you're exactly relevant to what the applicant is proposing to do when this latest line of questioning is for everything that's beyond their control and well offsite.

MS. CSANK: Your Honor, the project is the but-for cause of 30 to 50 years of additional gas sufficient to operate the plant.

And so you know, if you'll allow me a little bit of leeway I'll get to the potential significance of all of that gas and the emissions that are upstream.

THE HEARING OFFICER: Proceed, but with caution.

MS. CSANK: Thank you, your Honor.

Would you please answer the last question of mine?

MR. BALDWIN: Could you repeat that question, please?

[Reporter reads back question.]

THE WITNESS (Hibbard): So maybe I can jump in, and I think what you're asking is for every molecule of gas burned at the plant, is there leakage associated with the production and transport? Is there methane leakage associated with the production and transport of the gas that's ultimately consumed at the powerplant? And can that be quantified?

And I think, you know, there's widespread literature with estimates of what those potential additional emissions are associated with transport. And I don't think there's agreement yet on how to quantify that, but people have tried to quantify it and have come to different answers.

I do think an important point here is, to the extent that this facility burning natural gas displaces generation from other fossil fuel

generated facilities, it's also displacing the leakage in upstream emissions associated with the transport of those fuels.

So I -- I think that would be an important thing to take into account if that -- if you were trying to estimate that.

MS. CSANK: So you yourself have not performed any such analysis. Have you, for the purpose of this matter?

THE WITNESS (Hibbard): I have not.

MS. CSANK: And subject to check, since you have identified efforts to calculate those upstream emissions, those indirect impacts, subject to check, would you agree that the upper reaches of that range are emissions that are comparable in mass to the emissions from the direct impacts, i.e., the stack emissions?

THE WITNESS (Hibbard): That's certainly not my impression.

MS. CSANK: Why not?

THE WITNESS (Hibbard): I -- I have looked at some of these studies in the past. I couldn't tell you here exactly what I've read, but I'm not under the -- I don't have, sitting here, the impression that the global warming impact of

upstream emissions is equal to the stack impacts of CO2.

MS. CSANK: Sir, are you an expert in this subject?

MR. BALDWIN: Mr. Chairman, he was asked the question.

THE HEARING OFFICER: I really think the question was answered before. And, Mr. Hibbard, when you asked him a question did he do any types of studies upstream, his answer was no.

So any type of comparison that he can possibly give you out of that wouldn't exist, because he did not do these studies upstream. So with the answer of no, I'd really like to move on.

MS. CSANK: Yes, your Honor, but I do think if you'll just -- I beg your indulgence.

He then offered this Council and impression and I think it's very important for the record to understand the basis for his impression, and the evidentiary basis for that impression since it is at this point just bald testimony.

THE HEARING OFFICER: But I don't see an impression being the study.

MS. CSANK: Right, sir. But he did offer a conclusion, a factual conclusion based on

that impression. I just want to make it crystal clear where he's getting that impression from so that your Honor can give it its due weight, or otherwise we move to strike it from the record.

THE HEARING OFFICER: But again, if he moved to give you an answer out of it, he's giving you an opinion. And if you try to ask him what his background is, or what his authority is to do that I don't see how it relates if he's trying to give you an opinion.

I would move on.

MS. CSANK: Yes, sir.

If I may just ask him for that impression, which I understood to be something slightly different than what he said he didn't do an analysis on.

And so I just want to make sure that that impression also is not undergirded by any analysis specific to this project?

THE WITNESS (Hibbard): Specific to this project? No.

MS. CSANK: Thank you, sir.

Before we went down this path together I believe we were talking about -- or you were identifying for us the integrated nature of the

market, and how this project is important to understand in the context of that market.

Do you recall that?

THE WITNESS (Hibbard): I do recall discussing the integrated nature of the power system in New England and the wholesale markets in New England.

MS. CSANK: Is the state of New York's energy resources -- those are connected to the New England market. Correct?

THE WITNESS (Hibbard): There are limited transmission interconnections between New England and New York over which power flows, and there are also market transactions between the two regions.

MS. CSANK: And so New York resources can supply Connecticut customers. Correct?

THE WITNESS (Hibbard): To the extent that resources in New York are not needed in New York for power system or policy reasons.

And there's a market opportunity to sell those resources into New England, and there's sufficient trend -- transmission capacity to deliver that energy into the region. Then those resources could participate in the New England

market, yes.

MS. CSANK: So I believe when we were earlier discussing the Algonquin Pipeline one of the claimed benefits of this project is that it increases firm supply to New England as opposed to New York.

Do you recall that?

THE WITNESS (Hibbard): I do recall.

MS. CSANK: So can you please explain to us why that would be an actual benefit to Connecticut?

THE WITNESS (Hibbard): Well you know, as we were discussing, Connecticut is part of the New England region. And one of the reliability risks in New England that's been discussed extensively in this docket is the ability to keep the lights on during very cold winter conditions.

This facility, through its firm transportation contract, likely increases the flow of gas into New England under the coldest weather conditions in the winter. And as a result of that it helps address the fuel security risks that have been identified by ISO and government agencies, and that have been the subject of the -- of a lot of discussion here in these proceedings.

MS. CSANK: Why do you say likely?

THE WITNESS (Hibbard): Because it's -- it's not something that where you can point to a specific quantity of gas in every hour that flows across the border associated with this contract. It's really a comment on the coldest winter days, how does it potentially affect the flow of gas into New England.

MS. CSANK: Have you performed any analysis to quantify the supply risk? In other words, of supply, of gas supply not being available for the plant to operate?

THE WITNESS (Hibbard): Yes.

MS. CSANK: You've quantified that?

THE WITNESS (Hibbard): Yes -- no, I'm sorry. Let me take it back. I have -- I have on several projects evaluated the fuel security risks associated with operation of the power system in New England. I'm also currently undertaking a similar study for the New York ISO.

I have not specifically tried to quantify the fuel security and risk in New England as a function of the operation of this project.

MS. CSANK: So I believe there was discussion of contingency planning and what would

happen if there were a disruption, a pipeline failure. Do you recall that?

THE WITNESS (Hibbard): I -- I recall the discussion this morning associated with that hypothetical, yes.

MS. CSANK: And in that discussion either you or one of your co-panelists said that the firm gas supply contract was, quote, incredibly important to avoid the, quote, nightmare scenario.

Do you recall that?

THE WITNESS (Hibbard): I personally believe that the firm supply transportation natural gas supply contract that this facility has included is incredibly important for fuel security here in New England.

MS. CSANK: Well, maybe we can better understand. What does this contract do exactly?

THE WITNESS (Hibbard): It gives the project the right to the transportation of natural gas 365 days a year.

MS. CSANK: And I think we talked about how that gas would come down the Algonquin transmission line across this two-mile ladder. And all that is operated by Vermont Yankee.

Correct?

THE WITNESS (Hibbard): I don't think the gas system is that -- that easy to -- to make a direct connection of exactly where the molecules are coming from, and where they get delivered to the burner tip.

MS. CSANK: So do you have a contract with the entire pipeline system?

THE WITNESS (Hibbard): It's a contract with -- with another entity to transport that volume of gas on a daily basis to the powerplant.

MS. CSANK: Who's the counterparty?

THE WITNESS (Hibbard): I believe in this case it's Emera.

MS. CSANK: And Emera, for the benefit of the record, is spelled E-m-e-r-a. It's a Canadian company. Correct?

THE WITNESS (Hibbard): Yes. There, they're based in Canada. They have natural gas and electricity, and hedging option trading operations throughout the Northeast.

MS. CSANK: Indeed, and they have operations in Barbados where they have -- or they've committed to help that island?

THE HEARING OFFICER: I don't see how

that's appropriate.

MS. CSANK: Your Honor, it simply gets at this decarbonization idea, but I'll strike that question.

Sir, do you know where Emera is going to be getting the gas that it will be firmly supplying to the project?

THE WITNESS (Hibbard): No.

MS. CSANK: Not at all?

THE WITNESS (Hibbard): No.

MS. CSANK: How would you go about finding out?

MR. BALDWIN: Why is it relevant where the gas comes from, Mr. Chairman?

THE HEARING OFFICER: Yeah, I don't see how that fits in. If they have a contract to get materials, just like they would go to a gas station to get gas, am I going to ask where that gasoline is coming from? They have a contract to get gas from Emera. They get gas from Emera.

MS. CSANK: So given this Council's interest in contingencies, I would submit that understanding the source of the main fuel that the project is supposed to rely on for decades is highly relevant.

So if the Council would indulge me just a few questions I promise not to go on for long.

MR. BALDWIN: The question then has been answered. He doesn't know.

THE HEARING OFFICER: He doesn't know, yeah --

MS. CSANK: This is a slightly different question, your Honor -- sorry to interrupt. It's not whether he knows or not. How would he go about finding the answer?

THE HEARING OFFICER: Why would he have to find the answer, is the question I would pose to you if he knows it's coming from Emera?

MS. CSANK: Well, Emera is a company. It is not a source of gas, a physical source of gas.

THE HEARING OFFICER: And his contract is with the company.

MS. CSANK: Right, but in order to understand the size of the risk to properly understand whether this project will, in fact, be available to supply Connecticut customers, the Sierra Club maintains it's very important to understand the source of that fuel.

MR. BALDWIN: And the witness has

answered he doesn't know, Mr. Chairman. I don't know what else to do.

THE HEARING OFFICER: I think the answer is there. I really think we need to move on.

MS. CSANK: Yes, your Honor.

THE HEARING OFFICER: Thank you.

MS. CSANK: Sir, you earlier identified shale gas as being a great boon to New England. Do you recall that?

THE WITNESS (Hibbard): I don't believe that's what I said.

MS. CSANK: What did you say about shale gas, and why is it relevant here?

THE WITNESS (Hibbard): I believe at the time we were discussing the impact of natural gas costs on electricity ratepayers, and my point was that because of the shale, what's happened with shale gas it's had a very strong price depression effect that has benefited both natural gas customers and electricity ratepayers here in New England.

MS. CSANK: Sir, have you performed any analysis that quantifies the costs associated with the pollution of that gas?

THE WITNESS (Hibbard): I have not

specifically tried to quantify the risks or damages associated with emissions.

MS. CSANK: So can you offer this Council any sort of evidentiary basis for comparing the supposed savings to the public as compared to the costs associated with that gas supply?

THE WITNESS (Hibbard): I have not in this proceeding offered any sort of a benefit cost analysis like that, no.

MS. CSANK: And for the benefit of the record, what's the difference between shale gas and natural gas?

THE WITNESS (Hibbard): I don't believe there's any difference. Shale gas is natural gas.

MS. CSANK: And the "shale" modifier refers to the physical formation from which that gas is extracted. Correct?

THE WITNESS (Hibbard): Correct.

MS. CSANK: And the extraction method includes horizontal drilling and hydraulic fracturing. Correct?

MR. BALDWIN: I'm going to object, Mr. Chairman.

Again, we're talking about the source of

the gas. I'm not sure why that's relevant to the Siting Council's review criteria as it relates to this proceeding.

THE HEARING OFFICER: Yeah -- no, I agree. The applicant is not fracking gas out of this. They're getting their gas presumably through Emera. I would like to focus again on the plant, if need be Emera, but really to move on.

You know, horizontal drilling I don't think really applies here.

MS. CSANK: Sir, for the record, Sierra Club objects to this argument by distinguished counsel for NTE.

We strenuously maintain that the source of the gas and the emissions associated with that gas, and all of the other environmental harm associated with that gas, its source, its extraction, its transportation are relevant to this proceeding under broad statutory criteria that investigate the public interest.

THE HEARING OFFICER: I'm going to overrule and ask Attorney Bachman to comment on a few things.

MS. BACHMAN: Thank you, Mr. Chairman.

The Council's review criteria for this

application is contained under Connecticut General Statutes Section 16-50P.

The analysis for whether or not the project would be approved in accordance with our criteria does not extend to any upstream costs or actions over which the applicant has no control.

This is an application for a certificate for an electric generating facility. The standard is a public benefit versus any of the adverse environmental impacts and the costs to the ratepayers. It really does not extend any further than what the applicant has control over, which is the facility.

So any upstream costs or fracking or anything related to where they get the gas is really irrelevant to this proceeding. They have a contract for gas.

We need to move on, please.

MS. CSANK: Thank you.

Sir, just for the benefit of the record, the various benefits of this project -- I just want to make sure that the record is clear on the factors that are relevant to the realization of those benefits for the public. So if you would just help me understand?

Would regulation of the gas supply potentially -- I mean, is there any evidence in the record of a regulatory risk analysis and its implications for the project?

THE WITNESS (Hibbard): Can you clarify what you mean by regulatory risk analysis?

MS. CSANK: If there were regulation upstream that this Council is not looking at, could that have implications for the gas supply to the project?

MR. BALDWIN: Again, I will object. Now we're back to talking about upstream impacts.

THE HEARING OFFICER: Yeah, I agree. We're back to what we just talked about two minutes ago.

And I would move on from here, please.

MS. CSANK: Sir, what is the term of the firm supply contract?

THE WITNESS (Eves): Seven years with a seven-year extension.

MS. CSANK: What does that mean, seven-year extension?

THE WITNESS (Eves): That means at the end of the first seven years we can extend the contract for another seven years.

MS. CSANK: How?

THE WITNESS (Eves): By signing an extension. The terms are negotiated.

MS. CSANK: So the terms could change?

THE WITNESS (Eves): No, the terms -- the terms are negotiated. So the terms of the extension are negotiated.

MS. CSANK: I see. And so as we sit here today do you have any guarantee of what gas prices will be in seven years?

THE WITNESS (Eves): No. We have a guarantee on the transportation costs, but the gas price will be based on market.

MS. CSANK: So as we sit here today there's no insurance for the people of Connecticut against swings in gas prices over the 30 to 50-year line of this project. Correct?

THE WITNESS (Eves): That's correct. We're buying gas from the market, and it's the same gas that anybody else that's burning gas is paying at the same prices that they're paying.

Our facility will burn less than competing facilities. So when gas prices are higher on a per megawatt hour basis our electricity will be providing a cost benefit.

MS. CSANK: Would you agree with me that the project is a relatively lumpy addition to the grid?

THE WITNESS (Hibbard): What do you mean by, lumpy?

MS. CSANK: Typically power supply is added incrementally. Correct?

THE WITNESS (Hibbard): New capacity is added incrementally.

MS. CSANK: And the smaller the increment over time the smoother the additions are. Correct?

THE WITNESS (Hibbard): I'm not sure I'm quite -- could you restate it, please?

MS. CSANK: Sure. So let's take a resource like energy efficiency. Just bear with me. This will be brief.

You can add energy efficiency in very small increments to the grid. Correct?

THE WITNESS (Hibbard): You can reduce demand through energy efficiency in very small increments.

MS. CSANK: And you can also reduce it in very large increments. Correct?

THE WITNESS (Hibbard): Not all at the

same time. I think it takes some time to implement the measures that actually lead to energy efficiency savings.

MS. CSANK: Okay. Whereas these vendors Siemens, Mitsubishi, they provide combustion turbine generators in certain preset sizes. Correct?

THE WITNESS (Hibbard): That's generally my understanding for -- for a gas-fired generator like this. There are relatively standard sizes.

MS. CSANK: And there's economies of scale. So these things tend to be rather large. Correct?

THE WITNESS (Hibbard): I would expect that.

MS. CSANK: And in this instance, in this very case the company is proposing a 650 megawatt nameplate capacity project. Correct?

THE WITNESS (Eves): That's correct.

MS. CSANK: And that's a rather large lump to be adding all at once to the grid. Correct?

THE WITNESS (Hibbard): I wouldn't character -- characterize it that way. I, you know, that's sort of a qualitative -- it's not as

large as Millstone or Seabrook, or some other fossil generating facilities that have been added to the grid, but it's not as small as incremental energy efficiency investments.

MS. CSANK: Has the company considered different sizes and whether they would better calibrate to customer needs?

THE WITNESS (Gresock): The original application did include an alternatives analysis that addressed a range of technologies. This technology and this size for the current project has been selected as the most appropriate.

MS. CSANK: And sir, you would agree that the energy market has been changing at a dramatic pace. Correct?

THE WITNESS (Hibbard): Could -- could you just -- I'm not trying to be difficult, but what part of the energy market?

MS. CSANK: Let's talk about the technology. So the technology changes, the technical changes of the resources available to customers has changed dramatically especially, I'd say, in the last decade.

THE WITNESS (Hibbard): I wouldn't limit it to that. I think for the past century there

have been periods of significant changes in the technologies that are making up the grid and contributing to meeting power system needs.

MS. CSANK: But let's talk specifically about certain resources, solar and energy storage. Those you would agree have experienced dramatic performance and price improvements over the past decade. Correct?

THE WITNESS (Hibbard): I would say the cost decline in solar and wind resources has been significant, and has led to significant expansion of those resources in New England and beyond New England.

Storage, I don't think there's any reliable evidence that storage is getting close to being economic or otherwise will play a significant role in the grid.

MS. CSANK: Besides that testimony, do you have any analysis in the record concerning the economics of storage as applicable here?

THE WITNESS (Hibbard): In this record I have not seen any economic analysis of storage.

MS. CSANK: But you did see the testimony submitted by Sierra Club last week. Correct?

THE WITNESS (Hibbard): I read The testimony by Mr. Fagan and Ms. --

MS. CSANK: Glick?

THE WITNESS (Hibbard): Glick, yes.

MS. CSANK: Did you disagree with their characterizations of those technologies?

THE WITNESS (Hibbard): Of storage, yes.

THE HEARING OFFICER: If I could interrupt? That's not in evidence at this point. I can't reference that.

MS. CSANK: Yes, your Honor.

THE HEARING OFFICER: Perhaps on May 2nd we could revisit it if need be, but not today.

MS. CSANK: I will relent on that line of questioning.

Sir, what about the specific technology that's being proposed by the applicant here? Has it experienced any performance improvements in the past decade?

THE WITNESS (Hibbard): In my experience I believe we have seen continuous improvement in the performance, and in particular the heat rates of -- of generating plants like the one that's proposed in this facility.

MS. CSANK: And heat rate is a measure

of efficiency. Correct?

THE WITNESS (Hibbard): Yes.

MS. CSANK: So the lower the heat rate the higher the efficiency of a generator?

THE WITNESS (Hibbard): The lower the heat rate the less fuel it takes to generate a megawatt hour, yes.

MS. CSANK: And also the less emissions that result. Correct?

THE WITNESS (Hibbard): Agreed, per megawatt hour generated.

MS. CSANK: So efficiency is a great thing. Correct?

THE WITNESS (Hibbard): Efficiency is a great thing.

MS. CSANK: And you can achieve efficiency both on the demand side and the supply side. Correct?

THE WITNESS (Hibbard): Agreed.

MS. CSANK: And you have no reason to -- you haven't identified any constraints on further efficiency improvements on the demand side to serve the needs of Connecticut customers. Correct?

THE WITNESS (Hibbard): I'd -- I would

say no to that question. I -- as chairman of the Massachusetts commission I spent three years developing a rapid expansion of energy efficiency within that State, and then overseeing the utility plans to administer.

And I think there are some significant impediments to expanding energy efficiency mostly associated with the various parties that have different positions on the ratepayer impacts associated with doing so.

Having said that, the -- the level of growth and efficiency spending has been significant, and it could be larger.

MS. CSANK: So just to make sure that I'm following what you said, and I appreciate your experience in Massachusetts, that efficiency can be rapidly added to the system. Correct? On the demand side?

THE WITNESS (Hibbard): Again, it's the word "rapidly" I'm having trouble with. I think there's a process in order for efficiency to happen, ratepayer funded efficiency to happen there's a process by which the proposed investments need to be reviewed and approved.

And then once those have been approved

it actually takes some time to mobilize contractors to actually make the efficiency improvements.

So the word "rapidly" I'm having trouble with, but that doesn't mean there hasn't been significant -- and -- and fairly significant growth on the impact of energy efficiency on the grid.

MS. CSANK: When Ms. Gresock referred to an alternatives analysis that was previously performed, have you updated that for the purposes of this refiling?

THE WITNESS (Eves): I would say, no.

MS. CSANK: Is it your position that the company has maximized the supply side efficiency that is achievable through this project?

THE WITNESS (Hibbard): I -- I personally, you know, I don't consider myself a power technology engineer. So I -- I have no basis to answer that question.

MS. CSANK: Does anyone else on the panel?

THE WITNESS (Rega): Could -- could you restate the question? I'm trying to understand what you're getting at here.

MS. CSANK: Right. And I can reiterate, and please correct me if I'm wrong, but the predicate here was we just established that efficiency is a great thing. And efficiency can be achieved both on the supply side and the demand side.

And I was simply asking if it's the company's position that this project maximizes supply side efficiency?

THE WITNESS (Rega): Of course, you know, we certainly look at efficiency as a part of the project. And we believe that the technology that we've selected here is among the highest efficient units available.

MS. CSANK: Is there documentary evidence to show the alternatives that were considered in this latest iteration of review by the company to reassure the Council that it is, in fact, the most efficient unit possible?

THE WITNESS (Gresock): The original alternatives analysis had focused on selecting the Siemens equipment, and we have provided information about the efficiency of the now selected Mitsubishi machine demonstrating that there are greater efficiencies.

MS. CSANK: But Mr. Hibbard also told us that there's an expectation of continuous technological improvement for this type of technology. Correct?

THE WITNESS (Hibbard): I believe what I said is that in my observation the efficiency of generating technologies has continuously improved over time.

MS. CSANK: And do you have any reason to doubt that that trend would continue into the future?

THE WITNESS (Hibbard): I have no reason to doubt it, or confirm it.

MS. CSANK: So if that's true then wouldn't a same project two years from now, procured in two years, wouldn't that potentially be more efficient than one that's procured now?

THE WITNESS (Hibbard): I don't know the answer to that question.

MS. CSANK: You don't know because that you didn't perform any analysis on that issue. Correct?

THE WITNESS (Hibbard): I have not performed an analysis on the future efficiencies of -- the efficiencies of future generating

technologies, or the pace at which efficiencies will increase over time.

MS. CSANK: Nor did the company analyze whether greater efficiencies could be achieved by simply building this project out incrementally, but not all at once. Correct?

THE WITNESS (Eves): What we did evaluate over the last year -- which put us in a position to be very competitive in this, in this most recent forward capacity auction -- was an efficiency improvement that Mitsubishi had -- had developed for this machine.

So with the efficiency improvement it gave us a better heat rate and more output, and put us in a much more competitive position for this, for this last auction. So we did take advantage of those improvements as -- as they came about, which were technically proven within the last year.

MS. CSANK: Sir, would you mind answering the call of my question, which was whether the company performed any analysis of whether even greater efficiencies could be achieved via simply delaying -- or sorry, via incrementally building out the project?

THE WITNESS (Eves): This machine has only -- I mean, this facility is 630 megawatts, 650 megawatts. There's no way to build this incrementally. So we didn't -- we didn't look at building this specific facility in increments.

MS. CSANK: But other resources can be built out incrementally. Correct?

THE WITNESS (Eves): I -- I don't know. I don't know what resources you're talking about. This resource that we're talking about here, it cannot be built incrementally.

MS. CSANK: Nor did you analyze a one-year delay as compared to the projected in-service date. Correct? And the efficiency implications of that?

THE WITNESS (Eves): No.

MS. CSANK: Or the emissions implications of that?

THE WITNESS (Eves): No, we -- we didn't -- we have not evaluated that, what would happen if we got delayed another year?

MS. CSANK: But if the Council's objective were to adhere to state policy, to minimize environmental impact and specifically to decarbonize on this ambitious slope, wouldn't it

want to have evidence concerning whether greater emissions reductions could be achieved simply by delaying this project?

THE WITNESS (Hibbard): I'm not sure you can come to that conclusion. At least it's not my impression you can come to that conclusion.

I think that from the moment this plant operates it will be delivering carbon reduction benefits by displacing less efficient higher emitting, on a per megawatt hour basis, generating facilities.

MS. CSANK: Has the company performed benchmarking relative to other powerplants that are being proposed at this time, and their efficiency?

THE WITNESS (Gresock): I'm not sure what you mean by benchmarking.

MS. CSANK: Simply comparing. Let's say, has it compared its plan to other companies' plans to build similar technology?

THE WITNESS (Gresock): So certainly as a part of the air-permit review process we underwent several times a stringent review of the project, the project's emissions levels. And DEEP coordinated with U.S. EPA in terms of assuring

themselves that the lowest levels of the criteria pollutants possible are established here.

And so certainly that kind of benchmarking did occur, and the project was held to very stringent standards as a result.

MS. CSANK: And that's the extent of the analysis that the company is relying on here. Correct? For this issue?

THE WITNESS (Gresock): That -- that is the procedure for our air-permit review, yes.

MS. CSANK: And the air permit, just so that the record is clear, is really concerned with the emissions rate of the facility. Correct?

THE WITNESS (Gresock): There are emission rates evaluated. There is a cap on tons per year in terms of potential to emit, and also impact is evaluated for a range of pollutants as well.

And I think it's important -- I think there are -- are no other projects that I have worked on that have made the kind of commitment to reduction of greenhouse gases that this project is making. So I think from a benchmarking perspective that's an incredible benefit.

MS. CSANK: Just to be clear, when you

say that no other project has made such a commitment, you're talking about all sorts of projects. Correct?

THE WITNESS (Gresock): Well, none of the wind or solar projects I have worked on have made that kind of commitment either, but -- but yes, I'm referring to the fossil projects I have worked on. Yes.

MS. CSANK: And was there any sort of analysis performed of the cumulative impacts of the greenhouse gases that result from the 30 to 50-year operation of this project?

THE WITNESS (Gresock): No.

MS. CSANK: Do you know whether such analysis is feasible?

THE WITNESS (Gresock): I don't know.

MS. CSANK: You have never performed such analysis?

THE WITNESS (Gresock): I have not.

MS. CSANK: You have no reason to dispute that other states review such analysis?

MR. BALDWIN: Relevance. Chairman, other states' reviews?

THE HEARING OFFICER: Again, it has nothing to do with the applicant if you're talking

about a state. So I would move on from there.

MS. CSANK: Yes, your Honor.

THE HEARING OFFICER: Thank you.

MS. CSANK: I'm not sure who to direct this next question to, but going to the ambition of the applicant's greenhouse gas commitment. My question is whether that has been in any documented manner benchmarked against other utilities' greenhouse gas commitments in the U.S.?

THE WITNESS (Eves): Not that I'm aware of.

MS. CSANK: And I think Sierra Club's involvement in this earlier commitment was mentioned this morning.

To be clear, in the context of this proceeding, the Sierra Club has not conceded in any way that that commitment is sufficient for the purposes of the Council's review under the statutory mandate. Correct?

THE WITNESS (Eves): I don't understand that question.

MS. CSANK: That's all right. I'll strike it.

Sir, do you know if other utilities that own and operate fossil powerplants have committed

to also reduce the upstream emissions associated with their powerplants?

THE HEARING OFFICER: I'm going to interject on this one.

You go upstream -- I think it goes back to what we talked about before, and not being part of the application or what the applicant is proposing to do.

MS. CSANK: Sir, respectfully the company has now repeatedly asserted that it is unique in its level of commitment. And so I would submit that they have opened the door for me to probe about just how unique they are.

THE HEARING OFFICER: Your word "upstream" is the one that I caught. Upstream means beyond what the powerplant facility might be, and I'm relating that to what we were talking about before with fracking and that type of thing, which are totally not relevant to what's going on and are out of the applicant's control.

So if you want to define what you mean by upstream, maybe I'll allow it.

MS. CSANK: Thank you, your Honor. Maybe I can go about it this way very briefly.

Are you aware that Dominion Energy owns

and operates gas plants?

THE WITNESS (Eves): Yes, I know that Dominion Energy owns and operates gas plants.

MS. CSANK: Subject to check, do you also know that Dominion Energy committed this year to reduce its methane emissions from gas infrastructure by 50 percent over the next decade?

THE WITNESS (Eves): No.

MS. CSANK: Do you have any reason to dispute that Dominion has made such a commitment?

THE WITNESS (Eves): No.

MS. CSANK: Sir, earlier we were discussing at-risk units. Do you recall that conversation, Mr. Hibbard?

THE WITNESS (Hibbard): Yes.

MS. CSANK: And you testified that you cannot identify which units will retire, but generically you believe that coal and oil units are particularly at risk. Correct?

THE WITNESS (Hibbard): Correct.

MS. CSANK: You also believe there will be lots of gas online, gas generators online in the future. Correct?

THE WITNESS (Hibbard): I believe that gas-fired generation will continue to play an

important role in power system reliability for a fairly long time.

MS. CSANK: How long?

THE WITNESS (Hibbard): I don't quite have the crystal ball, but I -- I assume that they'll be very important for at least on the period of decades.

MS. CSANK: But when gas generators operate they typically emit greenhouse gases. Correct?

THE WITNESS (Hibbard): Yes.

MS. CSANK: And so insofar as Connecticut and several states have made commitments to phase out such emissions there's a tension with the continued operation of gas generators. Correct?

THE WITNESS (Hibbard): I agree that in order for the New England states to meet their current expectations and commitments with respect to carbon emissions, that they will have to, not only electrify the transportation and heating sectors, but will have to achieve reductions in greenhouse gases on a per megawatt hour basis from the electric sector over time.

Which to me means a reduction in the

existing coal, oil and gas-fired fleet over time in the total annual megawatt hours generated by those facilities.

MS. CSANK: But you cannot provide the Council with any lifecycle comparison of burning gas for energy compared to burning coal for energy, for example. Can you?

THE WITNESS (Hibbard): I have not tried to provide testimony of that nature in this case.

MS. CSANK: But you also testified that you believe older, dirtier gas steam units will retire in the foreseeable future. Correct?

THE WITNESS (Hibbard): I believe that once the coal and oil-fired units are retired then the less efficient more expensive on a variable cost basis gas-fired generating units will also have challenging economics.

MS. CSANK: Why?

THE WITNESS (Hibbard): Because more efficient generating units can generate electricity on a per megawatt hour basis at a lower cost. And the revenues that a generating unit earns over the course of the year are a function of its costs versus what it earns in the wholesale market.

So the less efficient units, not only will be dispatched less, they will actually earn less revenues for each megawatt hour they generate as continued efficiency is reflected in wholesale power prices.

MS. CSANK: Do you dispute that older less efficient units can be made more efficient via efficiency upgrades?

THE WITNESS (Hibbard): I believe that any generating unit can make capital investment to change its -- its operations. I think in order to really capture increases in the ability to generate electricity more efficiently it requires major capital investments, not small capital investments.

MS. CSANK: So besides this testimony do you have anything in the record that specifically analyzes this issue for the Council?

THE WITNESS (Hibbard): I do not have anything in the record that specifically analyzes that.

MS. CSANK: Does the firm supply contract include any continencies, any outs for the company if the project were denied?

THE WITNESS (Eves): You mean, would we

cancel the project if we didn't have a combustion turbine to burn the gas in?

MS. CSANK: The pipeline, the firm supply contract, would you cancel that contract?

THE WITNESS (Eves): If we didn't have a machine to burn the gas in we would cancel the contract.

MS. CSANK: And without that contract would Connecticut still be able to procure additional gas supply for its existing gas generators?

THE WITNESS (Eves): The same way -- I would say the same way they're doing it today.

MS. CSANK: Does that firm supply contract entail any actual additional steel in the ground, any additional infrastructure?

THE WITNESS (Hibbard): You know, I think this is a really important question for the Council, because it's -- you can't point to the specific contract and say as a result there's an additional compression station or a looping project, or an additional incremental pipeline. That's not possible.

But it's also not possible to say that firm transportation are not exactly what's needed

in order to provide the financial incentives for investment in new capacity. That's exactly how it works.

So can you say, can -- can the applicant link that firm transportation contract to a specific piece of natural gas infrastructure in New England? The answer is no, but I think that's not really the whole story. This is the only way to get new infrastructure built.

MS. CSANK: So is it your position that, in fact, as a result of this contract additional infrastructure will be built to supply the region?

THE WITNESS (Hibbard): No, that's not what I was saying, but I think you will not get new infrastructure without additional incremental firm transportation commitments.

And it's really, you know, could I say, does it take one contract like this? Or two or three, or four? I don't know the answer to that question, and I haven't analyzed it in this docket.

MS. CSANK: And you're not a lawyer, sir. Correct?

THE WITNESS (Hibbard): No.

MS. CSANK: So let's just stipulate that

you're not offering any legal conclusions to the Council. But in your experience, given your extensive experience do you dispute that an applicant could enter into a contract that specifically procures additional gas infrastructure such as additional compression and additional looping?

THE WITNESS (Hibbard): I don't see why any entity in the market for gas couldn't enter into that sort of a contract if there was a project available.

MS. CSANK: But that is not in fact what the applicant has done so far as you know?

THE WITNESS (Hibbard): The applicant has entered into a firm transportation contract with Emera, potential --

MS. CSANK: For a term of seven years?

THE WITNESS (Hibbard): And a potential -- and a potential extension for another seven.

MS. CSANK: My understanding -- well, that extension would potentially include different terms. Correct?

THE WITNESS (Eves): No, that would be under the same terms. That -- that would be under

terms that are already negotiated. So we have seven years that when we start drawing gas we have seven years.

At the end of that seven-year period we have another seven years under terms that are already negotiated. So we have a 14-year supply.

MS. CSANK: What is the blast zone of the storage facilities on the site?

THE WITNESS (Gresock): We have not calculated that.

MS. CSANK: What is the makeup of the -- strike that.

I just wanted to clarify the record. There was discussion of carbon capture and sequestration technology as a form of greenhouse gas reduction. I believe this was Mr. Eves' testimony.

And I believe, sir, you testified that the company is working with Mitsubishi on the various technologies, but that carbon capture and sequestration was not among them.

Is that correct?

THE WITNESS (Eves): That's correct.

MS. CSANK: And what is your basis for your assertion that the company will be capable of

later implementing control technologies that are under development by Mitsubishi?

THE WITNESS (Eves): Just our experience, and as we've talked about technical -- technological change over the last few decades, we would expect that change to continue.

As we said earlier, we did put in -- in our commitment the ability to buy offsets for carbon if those technologies don't become commercially available.

MS. CSANK: Where would those offsets be located?

THE WITNESS (Eves): I have no idea.

MS. CSANK: And I believe with Ms. Fiedler we established that the offsets that are contemplated are located in New York.

Correct?

THE WITNESS (Gresock): The -- those are not contemplated offsets. Those are the required emission reduction credits that have been purchased and -- and are part of the air permit, yes.

MS. CSANK: And those offsets concern criteria pollutants. Correct?

THE WITNESS (Gresock): Yes.

MS. CSANK: And criteria pollutants?

THE WITNESS (Gresock): It's nitrogen, nitrogen dioxide.

MS. CSANK: Has the applicant quantified the pollution reduction benefit to the communities who are near the site?

THE WITNESS (Gresock): What -- what do you mean by that question?

MS. CSANK: I'm simply trying to establish whether these offsets are really going to help the local people?

THE WITNESS (Gresock): By issuing the permit, Connecticut DEEP has affirmed that -- that we have met the standards.

MS. CSANK: What standards?

THE WITNESS (Gresock): There are requirements for the emission reduction credits that were established by both U.S. EPA and by Connecticut DEEP that within non-attainment areas require projects like this to maintain the offsets.

There are a whole series of rules that have been established to ensure that they are offsets that are meaningful and enforceable, and there's a whole litany of requirements that have

been stated in this record previously, and all of that was affirmed through agency review.

MS. CSANK: Thank you.

And just to clear up, the standards we're referring to are the National Ambient Air Quality Standards?

THE WITNESS (Gresock): The National Ambient Air Quality Standards are -- are established as a part of the federal and state rules, but there are also separate rules that govern emission reduction credits and requirements.

MS. CSANK: Okay. And sticking with that, the National Ambient Air Quality Standards, are you aware that those have changed over time based on improving science, understanding the public health implications of air pollution?

THE WITNESS (Gresock): They do change over time, yes.

MS. CSANK: And you're also aware that there's pending litigation concerning the National Ambient Air Quality Standard for the criteria pollutant for which the company has offset?

THE WITNESS (Gresock): I'm not directly following that, but there's always litigation of

some kind or another.

MS. CSANK: As so as we sit here today do you have a position on the company's ability to meet a more protective National Ambient Air Quality Standard for the various --

THE WITNESS (Gresock): I know that the project underwent a stringent review. The permit was issued and two subsequent modifications have been issued. The project has undergone that stringent review at each step along the way.

MS. CSANK: I believe in response to the Chairman's questions, the company's position -- and I believe this was Mr. Eves who stated that the project would, quote, unquote, always be able to burn gas.

What's the basis for stating that?

THE WITNESS (Eves): Our firm gas contract.

THE WITNESS (Hibbard): All right. I believe that was me. We were discussing how the firm gas contract actually allows this unit to be operating gas even on the coldest winter days -- operating on gas even on the coldest winter days.

MS. CSANK: But if there were some kind of pipeline failure would that still be true?

THE WITNESS (Hibbard): If there were any sort of catastrophic failure of any fuel delivery mechanism then that would affect the generation of any generating unit operating on that fuel, whether it's gas, coal, oil or anything.

And I think at that point in time the states tend to step in and take action to ensure, ensure that it doesn't lead to any adverse health or welfare impacts.

MS. CSANK: Okay. That's a little bit different than the question I was asking. So under the contract, the firm supply contract is Emera committed/obligated to transport the gas through non-pipe alternatives in the event of a pipeline failure?

THE WITNESS (Hibbard): I don't know the answer to that question.

THE WITNESS (Eves): No. I mean, it's if the pipeline -- they're bringing that gas through has -- has some type of an issue that interrupts the flow of gas on that pipe, they will not be able to deliver gas to us.

MS. CSANK: Have you performed any analysis of that contingency?

THE WITNESS (Eves): Other than just looking over the years on the availability of gas in that pipe, no.

MS. CSANK: I believe this was still the Chairman's line that I'd like to follow up on. He was asking about a New York planned plant, I believe, that was under construction that involved zero wastewater discharge.

Do you recall that?

THE WITNESS (Eves): Yes.

MS. CSANK: And I believe it was Mr. Rega who stated that that zero-discharge technology was ruled out on the basis of cost, reliability and even potentially space constraints. It that correct?

THE WITNESS (Rega): Correct.

MS. CSANK: Is that analysis documented in the record?

THE WITNESS (Rega): No, I don't believe that is documented.

MS. CSANK: There also was discussion around hydrogen storage and the so-called CFAS, which is a chemical safety standard administered and promulgated by the federal government.

Do you recall that?

THE WITNESS (Rega): Yes.

MS. CSANK: And I believe your testimony was that the project has been deemed adequate under current, those current safety standards.

Is that correct?

THE WITNESS (Gresock): We -- we stated that the storage volumes were below the U.S. EPA's risk management plan thresholds.

MS. CSANK: How far below?

THE WITNESS (Gresock): I don't have those numbers with me.

MS. CSANK: And are you aware of whether those standards have changed over time and are subject to change in the future?

THE WITNESS (Gresock): I haven't seen a lot of change in storage volume thresholds. I do see, as -- as we all do, industry, learning from experiences that -- that occur.

And there are, in addition to organizations like OSHA, there are trade organizations where powerplant operators share information and best practices so that the health and safety measures and training can be the best that it can be at every operating facility.

MS. CSANK: Is that a yes? No? Don't

know?

THE WITNESS (Gresock): What was the question so that I know how to answer?

MS. CSANK: Whether these chemical standards that we identified moments ago, whether they are subject to change?

THE WITNESS (Gresock): I don't know.

MS. CSANK: And turning next to the topic of the labor and project labor agreements, I believe some testimony expressed an openness to entering a project labor agreement.

I believe this was Mr. Eves. Correct?

THE WITNESS (Eves): No.

MS. CSANK: No, it wasn't your testimony? Or no, the company is not open to a project labor agreement?

THE WITNESS (Eves): No, that was not my testimony. My testimony was we have made a signed commitment to the unions that we would use union labor in this facility.

The various contractors that we are working on selecting approached how they contract with unions in different ways. One -- one way is a project labor agreement, a PLA. Because we hadn't selected our contractor at the time we

signed the agreement with the unions. We did not commit to a PLA, but have signed in writing a commitment that we will use union labor.

MS. CSANK: And it's binding?

THE WITNESS (Eves): It's a commitment.

MS. CSANK: Would you request that it be a condition of approval by this Council?

MR. BALDWIN: Objection. I don't think this Council can require it.

THE HEARING OFFICER: No, I was just going to say that's not part of our review.

MS. CSANK: Mr. Eves, you're not a lawyer. Correct?

THE WITNESS (Eves): I am not a practicing lawyer in the State of Connecticut.

MS. CSANK: And so can we stipulate that when you were describing a Rhode Island powerplant's eligibility, or the likelihood that it would reapply in the capacity auction, you are not offering a legal conclusion?

THE WITNESS (Eves): I was not offering a legal conclusion.

MS. CSANK: Nor have you performed any specific factual analysis of that plant's likelihood or ability to participate in future

capacity auctions. Correct?

THE WITNESS (Eves): No, I have done no analysis on that facility.

MS. CSANK: And just to circle over and make sure I understood correctly, the offsets that are included in the air permit, do they have any direct benefit to the local community?

THE WITNESS (Gresock): One of the many criteria for identifying acceptable offsets is that they have a direct effect and improvement in the area where the project is proposed.

MS. CSANK: And could you point us to where in the record that direct benefit is documented?

THE WITNESS (Gresock): There would have been a recitation of the requirements that are established by U.S. EPA and by Connecticut DEEP.

And because this -- the sources were in locations that would be contributing air quality to the project area, they -- they would, by having their -- having those emissions no longer occur that would have provided a benefit.

MS. CSANK: And if EPA were to improve upon the currently enforced National Ambient Air Quality Standard for NOx, would the company be

able to comply with it?

THE WITNESS (Gresock): It wouldn't be relevant. We have our air permit. Future projects would be held to any change in standards.

MS. CSANK: And you're not a lawyer. Are you?

THE WITNESS (Gresock): I am not.

MS. CSANK: I believe it was Mr. Hibbard who explained to us that the project would put pressure on, quote, unquote, virtually every -- I will just try that again.

On open quote, virtually every, end quote, fossil fuel plant on the system. Could you please explain that further to us?

THE WITNESS (Hibbard): Yeah. I -- this powerplant would have amongst the highest efficiency of all powerplants in the region.

And as we discussed with the Council earlier, I think Mr. Lynch in particular, the way that the system operator dispatches powerplants is on the basis of increasing variable cost and the efficiency of the unit. The heat rate of the unit is the primary determinant of that.

And so this unit presumably would come in very low, if not the lowest in the supply stack

of fossil generating units in New England. And in doing so, it would decrease the revenues that other units are earning in the energy market, other fossil generating units are earning in the energy market. In addition, it would decrease the actual number of hours those units would be operating.

And so every unit that is less efficient than this unit would be subject to the possibility of operating less and earning fewer revenues when it does operate. And that's exactly what puts economic pressure on the existing assets in the region.

MS. CSANK: Have you quantified all that you just described in any way?

THE WITNESS (Hibbard): I have done that type of analysis on numerous occasions.

MS. CSANK: But that was not your job in this case?

THE WITNESS (Hibbard): I have not -- I have not run a production cost model in this case. I have looked at the relative efficiency of all the generating units in the region compared to the Killingly -- Killingly in this case. And again, that's the primary determinant of this impact.

MS. CSANK: And just so that we're clear on your scope, did you look at units that are currently under construction or that are planned to be constructed within the lifetime of this project?

THE WITNESS (Hibbard): We looked only at -- I looked only at the existing operating units in New England.

MS. CSANK: Existing when?

THE WITNESS (Hibbard): Currently operating.

MS. CSANK: As we sit here today?

THE WITNESS (Hibbard): Yes.

MS. CSANK: So you did not look at plants that are currently under construction?

THE WITNESS (Hibbard): I did not look at those in that analysis.

MS. CSANK: Nor did you look at ones that are planned during the operational life of this plant, of this project?

THE WITNESS (Hibbard): I -- I compared this, this project's heat rate with the heat rates of plants that are operating today.

MS. CSANK: I believe in response to a question about the diesel supply limitations or

diesel-based operational limitations, testimony was offered that the diesel operations would depend on gas availability.

Could you please elaborate on the reasons why gas would not be available?

THE WITNESS (Gresock): So there are very specific conditions in the air permit that restrict the conditions under which ULSD can be fired.

MS. CSANK: May I just stop you there?

My question is, what are the various factors or the reasons why gas would not be available?

THE WITNESS (Hibbard): The only reason I can think of is what we were speaking to earlier, if there was some major contingency on the natural gas pipeline system. Otherwise, this unit has firm transportation rights equivalent to the owners of all other firm transportation rights on the pipeline system.

MS. CSANK: But isn't that major contingency the, in essence, the winter security reliability issue that we've been talking about?

THE WITNESS (Hibbard): No, absolutely not.

MS. CSANK: How are they different?

THE WITNESS (Hibbard): The winter energy reliability challenge that ISO has been spending a lot of time dealing with is one where there's limited -- there are very few, if any, other than this facility that have firm natural gas transportation contracts bringing gas into New England to operate their powerplants.

And that's why they'll operate most days of the year using the transportation capacity that is currently owned by local gas distribution companies. And so that the powerplants can operate most of the year on gas, but when you get to the coldest winter conditions they can't, because all of that capacity is being used by the local gas distribution companies that have the firm transportation capacity.

So that has a significant declining -- decreasing impact on the available natural gas-fired generation in the region. This facility would not be in that situation. It has a firm transportation contract that's as equally valid as any other local natural gas LDC.

So even on the very coldest days of the year it can get its gas.

MS. CSANK: And just to be clear, those other competing end users are not just other generators, but I think as you said, the LDCs, i.e., those who supply end users, such as businesses. Correct?

THE WITNESS (Hibbard): The major -- I would say that with the exception of this facility most of the firm natural gas transportation commitments to bring natural gas into New England are with the local natural gas distribution companies, and it's natural gas end use. So it's, cooking in homes, heating and that's businesses as well as residences.

MS. CSANK: What I'm trying to understand is -- I really struggle to understand how you're helping to solve that problem if you are not in fact contracting for additional infrastructure.

You're simply displacing other users who would otherwise get that gas in Connecticut?

THE WITNESS (Hibbard): You're not displacing other units -- other users.

Again, most of the hours of the year gas-fired powerplants can get whatever gas they need. It's on the coldest days of the year where

that capacity is not available. By entering into a firm transportation contract they are increasing the amount of gas that's dedicated that must come into New England on those coldest days of the year.

In my view, effectively what that does is it means that incremental gas will come in on the coldest day of the year, whereas it otherwise might be consumed in New York. So it's in incremental quantity of gas that will be coming into New England for electricity generation, not for heating homes or businesses.

So when we talked earlier, when Chairman Silvestri was speaking earlier about that one particular event and worked his way down to there being only four thousand something megawatts that could operate on gas at that point in time, this would be an additional 630 -- well, probably higher in the winter -- 630 megawatts of electric generation capacity available to the region that couldn't be interrupted because of constraints on the gas system.

MS. CSANK: But New York generators supply Connecticut customers. Correct?

THE WITNESS (Hibbard): To a limited

extent, but on the coldest days of the year I don't think that can be -- that can be assured.

MS. CSANK: Do you have any analysis on that?

THE WITNESS (Hibbard): I -- I have -- I'm currently working with the New York ISO, and I have anecdotal knowledge that there are transfers of electricity between New York and in New England all throughout the year, but on the very coldest days of the year when people in New York are trying to heat their homes and their businesses, and they need all the gas-fired electric generating capacity they can get, that's -- that's exactly the scenario where there could be a reduction or even a zeroing out of the amount of electricity flowing into New England.

MS. CSANK: So your testimony is that for this problem that stems from gas reliance in the first place, the solution is additional gas reliant power for 30 --

THE WITNESS (Hibbard): No.

MS. CSANK: -- for 50 years?

THE WITNESS (Hibbard): The problem that we have doesn't stem from gas reliance. It stems from the reliance on gas-fired capacity that does

not have firm transportation contracts. That's an important distinction.

MS. CSANK: But you have not analyzed the economic harm nor the environmental harm associated with gas infrastructure. Indeed, I have been unable and disallowed from asking you any other further questions on that topic. Correct?

THE WITNESS (Hibbard): For this proceeding I have not tried to conduct an analysis that estimates what the potential risks, or environmental or public health impacts are of any infrastructure.

MS. CSANK: And in fact, in prior analysis you have concluded that appropriate solutions to this problem of winter security include energy efficiency, demand response, storage and a host of other solutions not including additional gas generators like that which is being proposed in this matter.

Correct?

THE WITNESS (Hibbard): No, I wouldn't say we excluded gas-fired generation. We looked at exactly this deficiency problem and we analyzed four types of solution sets. One was new gas

infrastructure. Another one was a combination of energy efficiency, demand response and hydropower from Quebec.

Another one was to look at the existing market mechanisms leading to the availability of oil or LNG-based gas. And the fourth one was energy efficiency, dominated just by energy efficiency and demand response.

So we did these solutions sets and compared them on cost and environmental impact basis. It wasn't -- we didn't construct a gas powerplant scenario because that's ultimately dictated by the status quo scenario in our analysis, and that's -- that's in the analysis itself. And we, in fact, when we did the production cost modeling part of that we included new gas-fired generation being added to the region to meet incremental reliability needs.

So it's -- I know, but you asked. You asked the question and I -- so it's unfair to characterize that report as suggesting that gas-fired generation with a firm transportation contract is somehow excluded from the analysis.

MS. CSANK: So just to make sure that in plain English we can all understand what you just

said, I believe what you said is in the past you were specifically analyzing solutions to the winter security problem and you identified four scenarios.

One was gas infrastructure, i.e., not gas generators. Another -- and there were three other factors, none of which were expressly choosing additional gas generation. Correct?

THE WITNESS (Hibbard): No. No. The -- the gas infrastructure scenario specifically committed that gas infrastructure for electricity generation during the coldest winter days. In effect, that scenario said we're increasing the firm transportation quantity that's available to gas-fired generators in New England.

MS. CSANK: Existing?

THE WITNESS (Hibbard): Existing and new, because in our production cost modeling we were including new gas-fired capacity to build out for incremental demand growth, to meet incremental demand growth.

So that's why I'm saying, no, we didn't exclude gas-fired generation that has access to firm transportation. It's part of the solution set, the pipeline infrastructure solution set.

MS. CSANK: What about the three non-gas scenarios that you studied? Did they include new gas generators?

THE WITNESS (Hibbard): Yes.

MS. CSANK: All of them?

THE WITNESS (Hibbard): Yes.

MS. CSANK: How much?

THE WITNESS (Hibbard): I don't recall at this point in time. It's -- it would be gas-fired generation being added as needed to meet growth and demand.

MS. CSANK: And you performed production cost modeling for that analysis. Correct?

THE WITNESS (Hibbard): Yes.

MS. CSANK: And why did you? Why was that modeling relevant?

THE WITNESS (Hibbard): Because we were looking at various ways to address the gas deficiency problem and quantifying the impact of each of those solutions would have on ratepayers in terms of the upfront cost and the overall impact on energy prices. And in addition we're quantifying what is the greenhouse gas emission impact of those various solutions.

So the -- the whole point of the

analysis compares all of the solution sets from the standpoint of ratepayer impact and carbon dioxide emissions.

MS. CSANK: And we can agree that the credibility, the accuracy of modeling depends on the inputs?

THE WITNESS (Hibbard): I'm not sure how to answer that question.

MS. CSANK: Let me thread it this way. Modeling is an analysis that attempts to predict the future. Correct?

THE WITNESS (Hibbard): Our analysis contained a forecast of several -- of several things necessary for the production cost modeling, including forecasting various fuel prices, forecasting electricity demand growth.

So yes, forecasting was part of that analysis.

MS. CSANK: And in forecasting, the accuracy of forecasting depends on the accuracy and the realization of the assumptions that undergird the forecasting. Correct?

THE WITNESS (Hibbard): I -- I understand. I wouldn't say the accuracy. I would say that the results of any type of analysis

depend upon what assumptions you are making with respect to the forecasts. The accuracy actually depends on what does happen compared to what you modeled.

MS. CSANK: And forecasting, forecasts by the system operator, for example, are developed on a regular basis. Correct?

THE WITNESS (Hibbard): The system operator comprehensively assesses the -- and in this particular case I think what you're referring to is the level of electricity demand over time, and they do it based on economic analysis, historic -- historical data, and a comprehensive review of the energy efficiency and renewable energy resources that are -- distributed resources that are being added to the system as a result of state policies.

MS. CSANK: And the reason why they undertake such complex analysis time and again is because those inputs are changing over time. Correct?

THE WITNESS (Hibbard): They -- it's a requirement that they do that in order to meet the enforceable federal reliability standards, because all of that goes into identifying what is the

level of resources that need to be purchased to meet reliability, to meet the region's reliability needs. So that forecasting is required on an annual basis.

MS. CSANK: So the answer to my question is, yes?

THE WITNESS (Hibbard): You would have to repeat it. I obviously didn't directly say yes because I didn't think it could be answered that directly.

MS. CSANK: I believe we heard testimony that state-of-the-art controls for greenhouse gas reductions would not work on older gas plants. I think this might be best directed to Ms. Gresock?

THE WITNESS (Gresock): So I'm not sure what you're asking. Certainly the project was required to do a robust greenhouse gas backed analysis to evaluate best available control technologies, and that demonstration was a part of the air permit.

I believe Mr. Eves mentioned that it is uncertain as to whether add on developing technology would be suitable to apply to certain types of existing facilities, and -- and I don't -- I don't think we know the answer to that

question.

MS. CSANK: Wouldn't the same also be true with regard to this project, that over time it would potentially be less viable to put state-of-the-art controls on it?

THE WITNESS (Gresock): I think in this instance the project has made a very specific commitment to stepping down it's greenhouse gas emissions over time and we'll need to look very carefully at the various ways in which that can be done, whether that is operations, whether that's add-on controls, changes in technology or some kind of external offsetting.

MS. CSANK: Your Honor, if I may just ask for a two-minute restroom break so that I can make sure that I have completed all my questions?

Or a five-minute break?

THE HEARING OFFICER: Let's go for about 10 or 15 minutes. Let's get back here for quarter of.

(Whereupon, a recess was taken from 4:31 p.m. to 4:46 p.m.)

THE HEARING OFFICER: All right, ladies

and gentlemen. Thank you for the break. I did need to stretch my legs as well.

Why don't we continue with questions from the Sierra Club, please.

MS. CSANK: Thank you, your Honor.

So this next line concerns a statement in the January 2019 environmental overview, and specifically the reference therein to certain upgrades to the pipeline system owned and operated by Eversource which would provide for twice the capacity for downstream users.

THE WITNESS (Greysock): Can you provide us where that is in the overview?

MS. CSANK: It's on page 23. Can you please explain -- well, sorry. I'll let you get there. Please tell me when you're there.

THE WITNESS (Gresock): Okay.

MS. CSANK: Please explain what you mean by the system owned and operated by Eversource that this statement is referring to?

THE WITNESS (Greysock): I'm sorry. Can -- now that we've found the page, can you speak to the topic again so we can find it?

MS. CSANK: Yes, of course. So there is a statement at the beginning of the second full

paragraph concerning certain upgrades to the existing pipeline system owned and operated by Eversource. And the overview goes on to state that those upgrades would provide for twice the capacity for downstream users.

Are you with me?

THE WITNESS (Eves): That Eversource is Yankee Gas. Eversource owns Yankee Gas. So that's -- that's Yankee Gas' pipeline.

MS. CSANK: Okay. So where on that pipeline system are the upgrades occurring?

THE WITNESS (Eves): There's an existing either four or six-inch pipe. I believe --

THE WITNESS (Rega): Six.

THE WITNESS (Eves): There's an existing six-inch pipe. They are going to take that 6-inch pipe out and replace it with a 16-inch pipe.

MS. CSANK: Where is the termini of that pipe?

THE WITNESS (Eves): It starts at Algonquin and will run down to Lake Road just a little bit to the west of the facility, and then there will be a pipe over from -- from that point to our facility.

MS. CSANK: And so there's an existing

right-of-way along the entire linear course that you just described?

THE WITNESS (Eves): Yes.

MS. CSANK: And there's existing pipe between Algonquin and Lake Road, you said?

THE WITNESS (Eves): Yes. Yes.

MS. CSANK: And there's existing pipe between Lake Road and the site?

THE WITNESS (Eves): No, that -- that pipe will be added.

MS. CSANK: And that pipe will be two miles in length?

THE WITNESS (Eves): No, no. The pipe from Algonquin replacing the six-inch line, that's probably two miles. And then there's maybe a tenth of a mile from where that pipe crosses Lake Road down to our facility.

So the two miles of right-of-way have -- have the existing six-inch pipe in it.

MS. CSANK: Are there residential areas nearby?

THE WITNESS (Eves): Yes.

MS. CSANK: Do you know the demographics of those residential areas?

MR. BALDWIN: Can we be more specific as

to what areas you're speaking about?

MS. CSANK: Well, let me ask what's the scope of --

MR. BALDWIN: I just don't know if you're talking about the areas around the gas line right-of-way, the area around KEC.

MS. CSANK: Well, what has been analyzed by the company?

MR. BALDWIN: As far as the gas line extension?

THE WITNESS (Greysock): So in the original application we had some general information about the anticipated interconnection areas where we had some graphics that showed land use and natural resource mapping, but the actual permitting is something that is the responsibility of Yankee Gas.

And so we have not looked very closely at the details of their applications.

MS. CSANK: Okay. So in the context of this matter the company is putting forward analysis concerning the site itself. Correct?

THE WITNESS (Greysock): That's correct.

MS. CSANK: And what in relation to the site itself have you analyzed in terms of the

surrounding communities? What's the geographic scope that's been analyzed?

THE WITNESS (Greysock): So again, in the original application there was a fair amount of information about the surrounding land uses and zoning, and demographic characteristics of -- of the surroundings.

MS. CSANK: Has an update been performed for that analysis for the purposes of this matter?

THE WITNESS (Greysock): That has not been updated except to note that where Killingly was previously an environmental justice community, it's no longer listed as one of those distressed communities and no longer is under the environmental justice program.

MS. CSANK: Do you know the basis for the delisting?

THE WITNESS (Greysock): I do not.

MS. CSANK: Do you know the scope of the delisting?

THE WITNESS (Greysock): I do not.

THE WITNESS (Eves): No.

MS. CSANK: What are the nature of the pipeline upgrades to which we were referring are earlier in relation to what's referenced on page

23 of the environmental overview?
THE WITNESS (Eves): The upgrades are going to be to replace the 6-inch line with a 16-inch line.
MS. CSANK: Nothing beyond that?
THE WITNESS (Eves): No.
MS. CSANK: Is there additional compression associated with increasing the pipeline capacity?
THE WITNESS (Eves): No.
MS. CSANK: And when will those upgrades be completed?
THE WITNESS (Eves): This question was asked earlier, and I don't remember the specific date that we have in the agreement with the engineering agreement that we have in place with Yankee Gas Eversource.
But it should be, I believe, mid 2021 is the date that we have, but I would have to check that.
MS. CSANK: What regulatory approvals are required?
THE WITNESS (Eves): I don't know.
MS. CSANK: What is the status of them?
THE WITNESS (Eves): I don't know.

MS. CSANK: Is anyone else paying for them?

THE WITNESS (Eves): Under our engineering service agreement we are paying Eversource Yankee for the work they are doing on our behalf.

MS. CSANK: Is anyone else paying for them?

THE WITNESS (Eves): No.

MS. CSANK: How much additional capacity in cubic feet per day will those upgrades result in?

THE WITNESS (Eves): I don't know the answer to that and I've talked to Yankee about that pretty extensively. And that is a confidential number that they would like to maintain for themselves.

MS. CSANK: So that confidential amount has not been provided in discovery. Correct?

THE WITNESS (Eves): That's correct.

MS. CSANK: So what basis does this counsel have to verify that there is any additional capacity that's contemplated?

THE WITNESS (Eves): I don't know.

MR. BALDWIN: Mr. Chairman, I will

remind counsel. I know she wasn't here in the prior proceedings, but there was an extensive amount of discussion as it relates to this gas line extension and the limited role that this project team and this Council will play in that process.

It's a separate process, a separate permitting process that Yankee Gas will undertake. There's a contract that is a part of the record now that talks about our agreement with Yankee Gas and what it will entail, but I'm not sure why these issues beyond that are relevant.

MS. CSANK: If I may respond to that briefly, sir?

THE HEARING OFFICER: Please.

MS. CSANK: Mr. Chairman, my colleague Mr. Berman who regrets not being able to be present today who was part of those prior discussions specifically instructed me to ask this question.

So at least he believed that it was not sufficiently addressed by that prior exchange. And so insofar as the company has put forward these upgrades and indeed makes it part of its application materials, we would maintain that this

line is entirely appropriate to ask.

THE HEARING OFFICER: The line would be Yankee/Eversource. Am I correct on that, Mr. Eves?

THE WITNESS (Eves): Yes, Yankee and Eversource are the same company. So Eversource owns Yankee Gas. So we can use Yankee Gas and Eversource interchangeably here, but yes, the line will be owned by Yankee Eversource.

THE WITNESS (Greysock): And I guess I would note that the section referenced in the environmental overview is one that is discussing specific changes to individual sections that were in the original application, and it's speaking to the socioeconomic section.

And the reference to these upgrades is just intended to reflect the discussions the project has continued to have with the Town which acknowledges that there are certain upgrades that are for the benefit of the project, but that which also could result in some additional benefit to the Town relative to future economic development or what have you.

So the intent of it being reflected here is not to imply that we are approving this change

as a part of this proceeding, but to be descriptive.

THE HEARING OFFICER: Does that answer your question, Counselor?

MS. CSANK: I'm afraid I'm a little more confused than I was before, but I'll just continue in the interests of time.

So to be clear, will those upgrades, and however they were just characterized by Ms. Gresock, result in incremental gas capacity additions to the region of New England?

THE WITNESS (Eves): No.

MS. CSANK: Next, let's please refer to volume 1, the original 2016 application, page 17.

And I'm specifically referring to language that begins, KEC is located south of the traditional pipeline constraints that occur further north on the New England gas supply system around the major metropolitan and load centers, and it goes on. So that entire sentence is what I'm referring to in this.

MR. BALDWIN: Mr. Chairman, while Ms. Gresock pulls out her resource information referred to, I feel compelled to at least remind everyone here this is a limited purpose hearing.

This hearing is on the chain of circumstances that the Council heard discussions going back to the original application, the gas line, the constraints of the gas line somewhere else in New England -- I think is not focused on those changed conditions.

We might be more efficient in our time if we focused on the changed conditions. I think the Chair has given Sierra Club a lot of latitude in that regards. Many times we strayed from those changed conditions, sometimes more than others.

So I think if we can focus on what we're here for, the limited purpose for what we're here for we might be more efficient.

THE HEARING OFFICER: Counselor?

MS. MILLER: If I might respond on behalf of my clients which are Not Another Powerplant and the Wyndham Land Trust?

I would agree with the attempt at efficiency and to deal with the changed conditions, although I would submit that any progress that's been made towards permitting of the gas line would be something that we just would like to know given that that has happened in the two years since. So I know that for myself I do

have a very limited amount of questioning just on where that is and where we are in terms of that.

And I believe it probably stands, but we did have discussion early on about the segmentation of the project. And I would assume even though this is a new hearing, the discussions that happened then, the decision that was made and any appealability of it would still stand. That is everyone else's understanding.

So we don't have to make the same arguments again regarding the segmentation, but I actually direct that to Attorney Bachman. Are we at this point still in the same position that we were before with regard to the segmentation issue?

MS. BACHMAN: I believe that we are.

MS. MILLER: Okay. From what I recall I think it was the Connecticut Fund for the Environment who made a motion that was denied, and that is where that issue stands.

I know this is a continued -- kind of a continued hearing. So I have not made that motion again, again in the interests of efficiency with the proceedings. So I just wanted to note that.

But in terms of, I think, the question that we -- that my clients have with regards to

the gas line, it would be limited to what has happened in the past two years with regard to the gas line.

MR. BALDWIN: That's perfectly acceptable, Attorney Mintel Miller.

THE HEARING OFFICER: I agree. Thank you.

MS. CSANK: So the question that was pending was referencing again page 17 of volume 1 of the original 2016 application. And my question is whether -- what the company is proposing now in this matter is additional to what it proposed originally in 2016?

THE WITNESS (Eves): Yes, it is.

MS. CSANK: Please explain how it is different?

THE WITNESS (Eves): Oh, I'm sorry. I thought you said are we -- is it the same as we proposed in '16. What we are offering now is the same as what we offered in '16.

MS. CSANK: All right. Thank you.

My next question is for Mr. Hibbard. Are you familiar with Robert Ethier?

THE WITNESS (Hibbard): Yes, Bob Ethier at ISO New England.

MS. CSANK: Can you tell us his title?

THE WITNESS (Hibbard): I believe he's vice president for -- not market design, market operations.

MS. CSANK: Market operations?

THE WITNESS (Hibbard): Market operations, yeah.

MS. CSANK: I'll hand you an article that was published last month transcribing a recent interview with Mr. Ethier, if Mr. Chairman allows me or my colleague to approach the witness?

THE HEARING OFFICER: Relevance, Counselor?

MS. CSANK: This goes to certain statements that Mr. Hibbard has made in his testimony and making sure the record is clear on the basis of that testimony.

MR. BALDWIN: It would have been nice to have this article in advance of the hearing, Mr. Chairman.

THE HEARING OFFICER: Agreed.

MR. BALDWIN: And for that reason I object. I'm not sure. I haven't seen the article.

THE HEARING OFFICER: It's also not in

the record, Counselor, too. So --

MR. BALDWIN: Mr. Hibbard's comments in other proceedings may or may not be relevant, but I object to it coming in at this point.

They had ample opportunity to submit this information into the record and give us the opportunity, rather than trying to spring it on us at the hearing.

THE HEARING OFFICER: I agree. Without it being in the record right now we cannot use it at this time.

MS. CSANK: Your Honor, if I may just very briefly?

I understand the ruling, but just for the record the purpose of this document was not for the truth of the matter asserted. It's a rather brief document to give Mr. Hibbard an opportunity to expand on the testimony that he has provided and to clarify some of the statements he's made.

If it's still Your Honor's ruling that we cannot examine the witness on this document, then I would like to at least preserve that objection for the record.

THE HEARING OFFICER: Yeah. Again, the

document is not admissible at this point. I'm not sure what the relevance is based on what you're looking for Mr. Hibbard to expand upon.

If you had a question of what he might have been talking about earlier or his prior testimony, that you needed a further explanation, that I could allow.

MS. CSANK: Your Honor, this concerns the winter security issue which we've been discussing today.

THE HEARING OFFICER: Then please ask that question, but I don't want to keep going back to the same issues that we have discussed before because we really should have wrapped that up earlier -- but if you have that question on winter reliability please ask it.

MS. CSANK: And may I use the document to examine the witness? Or would you prefer I not do so?

THE HEARING OFFICER: (Shaking head in the negative.)

MS. CSANK: Okay. So subject to check, Mr. Hibbard, do you dispute that the concern that the New England system operator has expressed with respect to winter security is an energy shortage

issue?

THE WITNESS (Hibbard): I know that that's the phrase they have used in many documents.

MS. CSANK: And do you have any reason to dispute that Mr. Ethier has specifically stated that, although they have looked at pipelines as a potential solution, they have effectively ruled out pipelines as part of the solution.

THE WITNESS (Hibbard): I am aware from things that I have read that -- I'm not sure about Bob Ethier, but certainly the CEO Gordon van Welie has -- has essentially said that -- and I'm paraphrasing. So I may not be getting this exactly right, but that they no longer count on additional pipeline infrastructure being constructed as a way of addressing the winter reliability issue.

MR. BALDWIN: And do you know the reason why they have discounted that as a solution?

THE WITNESS (Hibbard): My -- my expectation is that -- is because there have been, number one, a lot of difficulty in siting new pipeline infrastructure in New England.

And number two, efforts to try to get

electric ratepayers to pay for it have failed. So it's sort of out of the jurisdiction of the power system. And there, there hasn't been a lot of progress in getting new infrastructure built. So I think it's just a reflection on the fact that some projects have been proposed and not constructed.

And so in terms of ISO's responsibility as the entity responsible for power system reliability, they're no longer counting on new pipelines. And so they're trying to figure out other ways to maintain winter fuel security. That would be my interpretation of whether it's Bob or Gordon.

MS. CSANK: Thank you. And indeed those, those other ways that are now being contemplated by the system operator include imports of electricity from Canada and offshore wind. Correct?

THE WITNESS (Hibbard): No.

MS. CSANK: Why not?

THE WITNESS (Hibbard): I think what their focus is, is developing market mechanisms to provide the correct financial incentives for ensuring winter security. They are not -- they

are not a proponent of any type of project or any fuel source or anything along those lines.

MS. CSANK: So you dispute that they're considering offshore wind and electricity imports from Canada as potential solutions?

THE WITNESS (Hibbard): I believe they evaluate all resources on the system, but they don't consider solutions. So the only thing within their purview is to design markets to provide the right financial incentives to maintain reliability.

MS. CSANK: So it would help if we define solutions. So I just want to make sure I understand what you're disputing. So can you explain that further?

THE WITNESS (Hibbard): Sure. ISO doesn't consider any resources whatsoever. All they do is design the wholesale markets in a way that investors will provide -- will invest in resources that can solve the reliability challenge they're trying to solve through a market design.

And so for example, I was mentioning earlier that there are interim compensation mechanisms. It's called for in the next few years where you if can demonstrate fuel security you can

get paid additional revenues.

In the meantime, ISO is trying to develop longer-term market designs that would provide the same sort of incentives to have fuel security during cold winter conditions, and it ranges from -- in the past it has ranged from including performance incentives and performance penalties in the capacity market, which still exists. It's included increasing the level of reserves on the system during winter conditions, increasing the pricing for reserves.

There are a lot of different market designs that are geared towards addressing the winter security problem, but ISO itself is resource developer fuel neutral. They can only create those financial incentives.

MS. CSANK: And sir, you are in a somewhat different position than the system operator. Have you considered those other resources and their potential applicability to this winter security issue?

THE WITNESS (Hibbard): I'm sorry. This is hydro and offshore wind?

MS. CSANK: Yes, sir.

THE WITNESS (Hibbard): I have certainly

thought about it.

MS. CSANK: And they are potential solutions?

THE WITNESS (Hibbard): You know, my personal view, I have looked at the contracts that are proposed for approval in Massachusetts for power from Hydro-Quebec and I don't think it necessarily provides that level of reliability. I know there are -- and this is my understanding.

I'm not a lawyer. I've only looked at the contracts out of interest, but this, my -- my review of them indicates that while there are daily energy delivery requirements there are ways in which Hydro-Quebec could say on a given day, I cannot meet those requirements today and I'll make it up later. That's my -- the way of explaining it.

And so in my view -- and I was involved in discussing this issue as a regulator in the past, and -- and when we did our report we were discussing earlier the thing that we included as a caveat was transmission from Canada can't help us in the winter unless it's absolutely guaranteed to be available on the coldest days of the year.

And in this case when I look at those

contracts there are winter delivery requirements, but Hydro-Quebec which is a winter peaking system could back out on a given day. Now again, I'm not a lawyer. I may have that wrong, but if that were the case those are absolutely not a solution to the winter security problem.

Offshore wind, to the extent it's available can reduce our need to generate electricity from other resources, but there's always that chance that on those coldest winter days the wind is not available, or is available at a lower -- an essential capacity factor than maximum.

So do I believe it can provide -- that can provide a contribution? Both of them, yes. Do I think that they're the same level of guarantee as a firm gas transportation contract, oil sitting in a storage tank or nuclear generation? No. I don't. I don't think it's equivalent.

MS. CSANK: Okay. And just so that we're clear we can agree that you did not perform that analysis for this matter as winter security relates to Connecticut. Correct?

Yes, no, don't know?

THE WITNESS (Hibbard): No. No. I'm thinking through my testimony and trying to see. I obviously have gone through this thought process, and I've done it in the context of working for clients on the winter security issue within New England.

So it's at the front of my mind and where -- was I thinking about that going through my mind when I was developing testimony for this particular case? Probably, but I can't think sitting here that in my testimony I specifically analyzed that in particular and commented on it in the testimony.

MS. CSANK: Nor did you quantify the reliability benefit that you're claiming this permit offers Connecticut. Correct?

THE WITNESS (Hibbard): I -- I think the reliability benefits of a powerplant like this are obvious as a function of design. I did not try to say, here quantitatively is what the reliability benefit is.

THE HEARING OFFICER: Mr. Lynch has a follow-up question.

MR. LYNCH: Mr. Hibbard, would a liquefied natural gas facility in the area help

alleviate that winter problem?

THE WITNESS (Hibbard): Mr. Lynch, I -- I think, let me -- and I know we discussed this a little bit last time. So let me take a shot at rephrasing what we talked about last time.

A liquefied natural gas facility like the one at Everett or at Canaport in Canada, or offshore provided there's a contract with firm transportation to a powerplant, can provide that level of security.

My understanding is that the smaller liquefied natural gas facilities that are construct -- that exist and that are being constructed are designed to help meet designed aid demand for the local natural gas distribution companies.

So that they could not be counted on to deliver gas to a powerplant for winter energy security. There they're generally there to maintain pressure on natural gas distribution systems and provide a peaking resource for natural gas, for heating and businesses, not for powerplants.

And when I was on the commission in Massachusetts effectively that wasn't -- those

were peaking facilities for natural gas demand for heating, and it would have been frowned upon to consider them as being a resource for powerplant operations during the winter.

MR. LYNCH: That's what I thought. I just wanted to get a clarification. And I know there's a big problem with transportation as far as liquefied natural gas, getting it into the -- especially in New England.

Thank you.

THE HEARING OFFICER: Counselor, you can continue.

MS. CSANK: Thank you, your Honor.

So nor have you analyzed, Mr. Hibbard, in any quantitative way the reliability benefits with respect to specifically this winter security issue for this matter and how resources such as offshore wind and hydro imports from elsewhere compare to the proposed project.

Correct?

THE WITNESS (Hibbard): That's correct, as you have stated it, but quantitatively I -- as I think I had testified earlier, a firm natural gas contract allowing for the operation of 630 megawatts on natural gas in the region would be an

incremental benefit to the region equal to 630 megawatts on a cold winter day.

MS. CSANK: Absent some kind of catastrophic pipeline failure that prohibits gas from reaching the project. Correct?

THE WITNESS (Greysock): On any given day if one of the major pipelines coming into New England has a catastrophic failure I think all bets are off, but that does not -- that does not relate to the reliability and fuel security value of this facility compared to other generating facilities in New England.

MS. CSANK: Well, those other resources, whether they're imports or sited within New England, if they're non-gas then they're not subject to that same catastrophic pipeline failure vulnerability. Are they?

THE WITNESS (Hibbard): Yes. Well, let me -- let me amend my last answer. As I mentioned I think this morning that in that catastrophic pipeline failure, don't forget that the dual-fuel capability of the facility, and ability to store oil and replenish it at a rate that allows them to continue operation I think is exactly that type of protection against a pipeline failure.

The problem we would have if demand were high and one of the pipelines were -- were lost could be lessened by generating resources that don't consume the gas. On the other hand, I think that's a problem of significant magnitude.

MS. CSANK: But neither you nor Yankee, nor Eversource have provided any analysis on the record of how long it would take to restore a pipeline's operations after such a catastrophic failure.

Correct?

THE WITNESS (Hibbard): That's correct.

MS. CSANK: Sir, do you know how many combined cycle gas plants Connecticut has added in the past two years?

THE WITNESS (Hibbard): Not off the top of my head.

MS. CSANK: Are you aware of the Towantic plant?

THE WITNESS (Hibbard): I am familiar with the Towantic plant, yes.

MS. CSANK: Subject to check, would you agree that that came online in 2018?

THE WITNESS (Hibbard): Subject to check, I'll agree with that.

MS. CSANK: And that is an 805 megawatt facility. Correct, subject to check?

THE WITNESS (Hibbard): I'll take it.

MS. CSANK: Are you aware, sir, that the Bridgeport Harbor Station 5 is among those new combined cycle plants that came online in the last two years?

THE WITNESS (Hibbard): That sounds familiar.

MS. CSANK: Subject to check, would you accept that that facility is scheduled to come online in the next two months?

THE WITNESS (Hibbard): Sure, and I'm, you know, I'm happy to go through and confirm these things in writing if helpful.

MS. CSANK: Is that a proffer of a late-filed exhibit?

THE WITNESS (Hibbard): Sorry, I'm not a lawyer. Yeah, I answered the question.

I'm accepting it subject to check.

MS. CSANK: That's fine for these purposes. Thank you.

Has adding such gas plants increased winter reliability in New England, sir?

THE WITNESS (Hibbard): To answer that

question, Counselor, I would want to look at the -- whether or not those units had firm natural gas transportation contracts and/or whether or not they had dual-fuel capability.

My expectation is that they both have dual-fuel capability, which is potentially helpful under winter energy security challenges.

MS. CSANK: And do those plants support integration of new renewable generation in the region?

THE WITNESS (Hibbard): Again, I would need to look at it, but my expectation is as natural gas plants that likely can cycle fairly easily and frequently, that they would support the integration of variable generation.

MS. CSANK: So that was a yes?

THE WITNESS (Hibbard): It should be obvious, yes.

MS. CSANK: Thank you, sir. And the applicant has elected to lock in its clearing price in the FCA-13 for the full allowable period of seven years. Correct?

THE WITNESS (Hibbard): That's my understanding.

MS. CSANK: And that's further

identified in interrogatory number 19, just for the record.

Does the applicant believe that capacity prices will remain at or below $3.80 per kilowatt a month for the next 7 years?

THE WITNESS (Hibbard): I -- I have not -- I personally on behalf of the applicant have not looked into that.

MS. CSANK: Mr. Eves, why did the applicant choose to lock in that price?

THE WITNESS (Eves): That gives us seven years of forecastable revenues. This market has been rather volatile in the auction. We thought this was our best way to lock in the seven years at a price that we know.

MS. CSANK: Besides the predictability or certainty of your revenue, was there any other reason?

THE WITNESS (Eves): No.

MS. CSANK: And you would know if there were?

THE WITNESS (Eves): I would think so.

MS. CSANK: The applicant also expects that several thousand megawatts of existing fossil fuel fired facilities are likely to retire in the

very near future. Correct?

THE WITNESS (Hibbard): I certainly believe that, at least to those, the existing coal and oil units that are economically challenged are likely to retire, and in addition potentially other units.

MS. CSANK: If thousands of megawatts are likely to retire imminently, wouldn't this be anticipated to increase capacity prices in New England in the next seven years?

THE WITNESS (Hibbard): I wouldn't be able to answer that without constructing a model to come up with a forecast that -- that I think represents how it would affect capacity market prices.

MS. CSANK: And again you didn't perform such modeling analysis for this matter. Correct?

THE WITNESS (Hibbard): Not for this matter, no.

MS. CSANK: Nor have any of the other company's witnesses. Correct?

THE WITNESS (Eves): Yes, that is correct. None of the witnesses here have conducted that, however PA analysis did conduct that in our -- in the first round of our hearings.

MS. CSANK: And that was based on inputs that are now over two years old?

THE WITNESS (Eves): Two and a half, three years.

MS. CSANK: Isn't it true that other resources are also anticipated to come online that will help offset -- strike that.

Isn't it true that other resources are also anticipated to come online that would further change capacity prices in New England in the next seven years?

THE WITNESS (Hibbard): Without, you know, I'm tempted to ask which resources in particular you have in mind. But provided they are full capacity market resources as opposed to state-sponsored resources, then I -- then I believe that at any point in time capacity market prices will be determined by both the demand curve and the supply of resources, and the offers that those resources make in the capacity market.

You can't look at a particular resource and know what they're going to offer and come to a conclusion whether or not it means the clearing price in the market will be different than it otherwise would, but obviously it's entirely

determined by that demand curve and the supply offers of all resources.

MS. CSANK: So as we sit here today you do not dispute that that supply curve may change based on the offshore wind being contracted for by Connecticut, Rhode Island and Massachusetts. Correct?

THE WITNESS (Hibbard): I prefer not to answer that because I don't -- haven't looked at the extent to which those resources would be state-sponsored resources subject to mitigation, and/or subject to participating in the market only through the -- the -- what is an adjunct to the capacity market. CASPR it's called.

So I don't -- so I think it's difficult to answer that question without knowing more about how those resources would be funded through ratepayers and ultimately how that would affect what offers they would make in the capacity market.

MS. CSANK: Thank you for the explanation.

So in short, you don't know?

THE WITNESS (Hibbard): Well, I certainly know how I would come to an opinion on

that if -- if I were asked to.

MS. CSANK: But as we sit here today you do not know the answer because you have not performed that analysis. Correct?

THE WITNESS (Hibbard): I have not performed that analysis in this case.

MS. CSANK: And similarly, you have not performed any analysis of how hydroelectric generation that would be wheeled in via the Clean Energy Connecticut line would impact capacity prices. Correct?

THE WITNESS (Hibbard): I would give exactly the same answer. It depends entirely upon their funding through ratepayers and how that affects the way in which they were -- whether, and the way in which they would participate in the capacity market.

MS. CSANK: Thank you, sir.

Returning back to Emera just very briefly. Emera does not own the Algonquin Pipeline. Correct?

THE WITNESS (Hibbard): Emera, as I understand it, has portfolios of supply and transportation assets throughout the Northeast. I do not know whether or not to what extent their

assets include transportation rights on Algonquin.

They are not the owner and operator of -- of the unit, but I don't know the answer to the question about what -- what comprises their portfolio of transportation assets.

MS. CSANK: Do you know if Emera presently sells gas into New England?

THE WITNESS (Hibbard): I certainly know they will in three years if this project is approved. My expectation would be that they are active in the New England market, and that's also my understanding.

Do I know of whether -- do I know of specific commodity sale contracts to entities in New England sitting here? No.

MS. CSANK: So when we earlier discussed the possibility that absent the project Emera could instead sell gas to New York, does the applicant have any analysis to support that claim?

THE WITNESS (Hibbard): I have not tried to forecast what Emera would do in terms of its participation in the natural gas market if Killingly did not go forward. I have not looked into that.

THE HEARING OFFICER: Can I ask

relevance on that, Counselor?

MS. CSANK: Yes, your Honor. It goes to this continued, and as characterized by the witness, critical issue of their claimed winter security benefit of this project. And whether it's in fact additive in any way as compared to what the existing resources and infrastructure are.

THE HEARING OFFICER: Is your concern Emera can't provide gas? Is that what you're trying to get at?

MS. CSANK: No, your Honor. It's rather the nature of -- and I don't want to get too far and testify myself. So perhaps I will just leave it at that, and say that this line goes to the winter security issue.

THE HEARING OFFICER: Yeah. I'm just trying to figure out where we're going. That's why I'm asking the question.

MS. CSANK: I'm sorry, Your Honor, that I can't better explain. As I stated earlier, some of this examination is informed by my co-counsel. And so I'm actually turning to a new line.

Mr. Hibbard, have you performed any analysis on customer vulnerability to gas price

fluctuations over the period of time that the project is supposed to operate?

THE WITNESS (Hibbard): Do you have any particular customers in mind? Do you mean, natural gas LDC customers in New England?

MS. CSANK: Yes, sir.

THE WITNESS (Hibbard): I have recently had occasion to look at potential variation in gas prices as a function of demand as part of a confidential project, but not for this project.

MS. CSANK: Subject to check, would you agree that recent news reports have identified that New England power costs have hit a four-year high due to New England's reliance on gas for power?

THE WITNESS (Hibbard): I wouldn't be surprised if that's been written in an article recently.

THE WITNESS (Thibeault): Well, why wouldn't you be surprised?

THE WITNESS (Hibbard): Because my understanding is that natural gas prices fluctuate as a function of the severity of the winter natural gas prices in new England. And we've had a relatively severe winter from that perspective.

It's not easy to pin it exactly to specific peak days or peak cold snap periods, but I know that virtually all of the year prices are suppressed because of the availability of gas and transportation.

And really when you look at, how does one year's annual cost of gas compare to another year? It's almost entirely driven by the volatility and the fluctuation during severe winter periods.

MS. CSANK: And you would also agree that, subject to check, the average price of electricity increased 28 percent in New England in 2018 as compared to the previous year while the average price of gas in New England increased 30 percent in that same period?

THE WITNESS (Hibbard): I'll agree that it looks like you're reading that from something, but I don't know those numbers in particular.

MS. CSANK: So yes, you agree subject to check?

MR. BALDWIN: The question was subject to check. You want to tell us what you're reading from, and maybe we can confirm it?

MS. CSANK: Yeah, I would gladly hand

the witness an article. I just got the impression that that would raise objections. I was trying to work around it.

THE WITNESS (Hibbard): You know, I'll accept subject to check that if the source of that information is, for example, the ISO New England reports, the market monitoring reports.

They tend to use accurate data on the price of natural -- well, their own estimates of the price of natural gas and compare in -- at the same time look at -- they have the data on what the price of electricity is.

So I -- I believe that what you're reporting is most likely accurate, and if it's ultimate -- the ultimate source is ISO New England, that's probably -- that's probably correct.

MS. CSANK: Your Honor, should the Council want to have it for its reference, the document I am referring to is a news report that is barely over a page. And we have copies to provide, but only if the Council is interested.

THE HEARING OFFICER: Unfortunately, Counselor, we normally don't take in news reports for exhibits -- but I do want to ask. You

mentioned winter reliability was your focus before, and I'm struggling again with the price of natural gas and the price of electricity, how you're trying to fit that in.

If you could explain that to me it would be great?

MS. CSANK: Your Honor, I think it's better explained by the witnesses, but just very briefly most things can happen at a cost. And so there's a very close relationship between what has developed to meet reliability and what prices the developers can obtain in the market.

And so that's why I would offer the relationship.

THE HEARING OFFICER: Perhaps you can formulate a question more specific to what you just told me.

MS. CSANK: Yes, your Honor. I'll endeavor to do so.

Mr. Hibbard, adding the project to New England's energy mix would release the power systems reliance on gas. Correct?

THE WITNESS (Hibbard): I think it would -- I think the answer to that question is no, if what you're referring to is the risks

associated with exposure to gas-fired generation during cold winter periods.

If the question you're asking is, will operation of this unit increase the total annual consumption of gas for electricity generation compared to a scenario where everything else was equal, but this powerplant didn't exist, I don't know the answer.

It could be less because it will be displacing at least in part gas-fired units that operate less efficiently -- efficiently. So I don't know what effect it would have on New England's annual consumption of gas, but I do know it would not increase our susceptibility to reliability risks during cold winter conditions.

MS. CSANK: What's the basis of that latter opinion?

THE WITNESS (Hibbard): A firm natural gas contract.

MS. CSANK: That's it?

THE WITNESS (Hibbard): That's -- yes, that's it.

MS. CSANK: Thank you.

What is the anticipated capacity factor of the plant in 2025?

THE WITNESS (Eves): That's something we'll have to check on. I know we submitted an answer to one of the interrogatories to that, that I think addressed the first -- first year capacity factor. Let me see if I can find it in here.

MS. CSANK: While you look, maybe I should just ask -- and step back -- a more basic question, which is whether the company has in fact modeled a capacity factor using a production cost model for future years?

THE WITNESS (Eves): Yes, we did and that was part of our previous hearings.

MS. CSANK: So it was that original analysis performed for the 2016 proceeding?

THE WITNESS (Eves): Yes.

MS. CSANK: And there's been no subsequent update. Correct?

THE WITNESS (Eves): That's correct.

MS. CSANK: Okay. Moving on. So maybe I can spare you from having to rifle through it.

THE WITNESS (Eves): Let me kind of clarify that a little bit. There's been no quantitative update.

We have sat down with Mr. Hibbard here and did a more, I would say, subjective update to

the production cost modeling results that we had from our previous case.

MS. CSANK: And so it's not the company's position that such quantitative model-based analysis is not feasible. You just did not do it. Correct?

THE WITNESS (Eves): We think that what has taken place between 2000 -- between when we opened the docket and now are -- the changes have been so clear. There's no read for -- no need for additional modeling.

MS. CSANK: What changes are so clear?

THE WITNESS (Hibbard): I -- the discussion we have had is -- really relates to what we've discussed several times I think throughout this proceeding, which is that the new project is larger and more efficient.

So holding everything else equal compared to the analysis that was done at the last point in time, those changes would have in a production cost model two effects. It would increase generation from the facility and reduce -- and increase -- and also lower the price per megawatt hour generated by the facility as a function of fuel cost.

So the only effect on a production cost model would be further displacement of more expensive resources. So the, you know, my judgment looking at that is that if we hold everything else equal, the change that's at issue in this case could only do greater benefits.

A production cost analysis -- which is complicated and would potentially inundate the procedures here. It would only generate results that would improve the project's impact from a ratepayer and economic standpoint.

MS. CSANK: What about the new gas plants in Connecticut that we spoke about?

THE WITNESS (Hibbard): By far the biggest impact of this facility will be on existing less efficient generating facilities, both in terms of hours of operation and over the longer run retirement of those facilities.

The -- the units that will always be -- or mostly be inframarginal and the dispatch of powerplants in New England will include this facility and any recent efficient combined cycle facility. The impact on production costs is really the impact on the more expensive less efficient facilities that are further out in the

supply stack.

MS. CSANK: So sir, the basis of the opinion that you just stated is your experience, and it's not actually any documented analysis for the Council or anyone else to independently review. Correct?

THE WITNESS (Hibbard): I did not do production costs modeling as part of my testimony here, but in discussions the conclusion that I came to in thinking about this is that it's really -- holding all else equal, there's really only one direction you -- you would get out of a production cost model compared to the previous facility, and that would be to increase its -- its generation and displacement of more expensive resources, and lower the price whenever it's on the margin.

MS. CSANK: But all else is not equal, sir. Correct? Because there have in fact been changes to the system since that production modeling was performed in 2016. Correct?

THE WITNESS (Hibbard): There certainly have been changes to the system on both the load side and the resource side.

MS. CSANK: So you haven't analyzed it?

THE WITNESS (Hibbard): No, I've thought about it. And I -- have I run the model? No, but in -- based on my analysis I don't think it would change the results other than to increase the economic benefit, and increase the ratepayer savings associated with this facility.

MS. CSANK: But you performed no analysis of gas price risk from customers now relying on more gas capacity for 30 to 55 additional years that they do not rely on today?

THE WITNESS (Hibbard): Again, this was all in comparison to the analysis that was done for the facility last time.

MS. CSANK: Okay. So I would like to turn next to the 2017/2018 winter cold snap -- and this continues to be a question, or a line, rather, for you Mr, Hibbard.

I would like to refer you to the applicant's sponsor to intervenor interrogatory number 15. Please tell me when you're there.

THE WITNESS (Hibbard): Okay. I'm there.

MS. CSANK: For your calculation of carbon dioxide emissions savings you assumed a hundred percent capacity factor for the project

and an output level of 647 megawatts. Correct?

THE WITNESS (Hibbard): I'll accept that subject to check.

MS. CSANK: At that output level -- rather that output level corresponds to the plant's operation under ISO conditions of 59 degrees Fahrenheit, or 14.7 psi barometric pressure, and at 60 percent relative humidity. Correct?

THE WITNESS (Hibbard): I believe it was -- I asked the company for that information. So --

THE WITNESS (Rega): I'll agree to that, subject to check.

MS. CSANK: Why did you use any output under ISO conditions?

THE WITNESS (Hibbard): I believe that's where we were able to estimate what the CO2 emission rate would be for the facility. And -- and in terms of the capacity the assumption here was that the unit under these conditions would be operating at full capacity.

MS. CSANK: But those conditions are not reflective of actual conditions during the cold snap. Correct?

THE WITNESS (Hibbard): I would be surprised if -- if the weather conditions during the cold snap exactly matched these winter specifications.

MS. CSANK: You assumed oil was the marginal fuel during all 336 hours modeled. Correct?

THE WITNESS (Hibbard): The assumption I made for the purposes of doing this proxy calculation was that what Killingly would be displacing would be oil-fired generation.

Recall at the time what ISO New England was doing as oil was being diminished throughout the region as they started posturing generation in order to maintain reliability. So I thought it was a reasonable assumption that if you increased gas-fired generation from Killingly, by and large what would be reduced in order to reserve to maintain oil in the tanks during these conditions would be oil-fired generation.

So it -- it's an estimate. It's a proxy calculation to say, here's the potential carbon benefit of this unit operating during that cold snap.

MS. CSANK: Did you verify that

assumption?

THE WITNESS (Hibbard): In what way?

MS. CSANK: Did you see if it reflected actuals?

THE WITNESS (Hibbard): I -- I was -- I was postulating a scenario where Killingly did exist during that period in time.

MS. CSANK: So the answer is no?

THE WITNESS (Hibbard): I don't understand the question. It wasn't -- I couldn't verify it because Killingly didn't exist at the time.

MS. CSANK: Killingly aside, all of the other -- strike that.

You assumed that gas being delivered to the project would not otherwise be delivered to a powerplant in New England. Correct?

THE WITNESS (Hibbard): Are you referring to this particular analysis?

MS. CSANK: Yes, sir.

THE WITNESS (Hibbard): Yes, my assumption was, this would be incremental gas-fired generation in New England displace -- displacing oil generation in part because at the time what we do know is all the gas-fired

generation that could operate was operating.

MS. CSANK: And how did you verify whether during the 336 hours that assumption was reasonable?

THE WITNESS (Hibbard): Again, I -- I did not verify it through any sort of modeling or -- or otherwise any specific analysis. This was indicative. This was an indicative calculation to say if Killingly existed here's the potential carbon dioxide reduction benefits.

I hope I did not represent it as -- as actually what would happen based upon production costs, modeling or some other type of modeling. And in part that wouldn't even necessarily be more accurate because of the posturing of units that was happening during this cold snap which isn't reflective of economic dispatch, which is what a production cost model is actually modeling.

MS. CSANK: So you're not guaranteeing these results?

THE WITNESS (Hibbard): I don't believe I've suggested these are absolutely guaranteed results for a future winter, if that's the question.

MS. CSANK: And you used your revised

CO2 emission rate provided by the company. Correct?

THE WITNESS (Hibbard): Yes.

MS. CSANK: Do you know how that emission rate was derived?

THE WITNESS (Gresock): It was based on the air-permit values.

MS. CSANK: And do you know how that emission rate compares to the emission rate that the applicant has used elsewhere in its application materials?

THE WITNESS (Hibbard): I do not.

MS. CSANK: And you put your Killingly emission rate in tons of carbon dioxide equivalents. Correct?

THE WITNESS (Hibbard): Whatever the -- the basis for the permit emission rate is, is the -- are the units.

MS. CSANK: Did you account for the greenhouse gas impacts beyond direct stack emissions?

THE WITNESS (Hibbard): Again, as when thinking through this analysis my assumption is that there are also upstream methane emissions associated with the delivery of other fuels that

were being displaced.

Did I specifically try to calculate the difference in upstream emissions of using this facility versus figuring out where the oil was extracted, whether it was tied oil, or somewhere else, and what's the methane that's released in the production and transportation of oil? I did not try to go through that analysis.

THE WITNESS (Gresock): Can I make a correction to my response? I had stated that the -- the CO2 emissions values were from the permit, but in fact I'm looking more closely at the notes here. And in this instance for this response it was associated with full output of the unit under -- under winter conditions.

MS. CSANK: Could you please explain the significance of that clarification?

THE WITNESS (Gresock): So the air-permit value would be under the ISO conditions previously referenced, which is the custom.

MS. CSANK: Thank you.

So understanding that you did not perform a quantitative analysis of anything beyond the direct stack emissions, as we sit here today do you have any opinion on their relative

significance as compared to the results of your analysis that you did perform?

THE WITNESS (Hibbard): Again, I -- I don't have any quantitative answer, but I -- I do want to reflect on the fact that if this is displacing other fossil fuel generation it wouldn't be appropriate to quantify only the upstream emissions of this facility.

We would want to quantify the upstream emissions of the sources it was displacing. And I have no reason to believe those will be greater or less than this one with the exception that -- and this is not the scenario here.

If this were displacing less efficient gas-fired generation then I would expect the upstream emissions of that less efficient gas-fired generation to be higher than this, because it's essentially more gas being burned for the same purpose, the same quantity of megawatt hours.

MS. CSANK: Okay. And now turning to the 2019 cold snap and liquefied natural gas. And I'm going to be referring to a publication by the Conservation Law Foundation entitled, Frigid Temperatures, Not a Problem in New England.

If I may, I would like to approach the witness and provide this publication to him? Otherwise I can proceed another way.

THE HEARING OFFICER: That goes back to what we talked about before with other exhibits that haven't been accepted into the record.

So the short answer is no.

MS. CSANK: So subject to check, during the 2019 cold snap, the 2019 cold snap was impacted by the availability of liquefied natural gas which I'll just continue to refer to as liquefied gas tankers that were moored off of Boston Harbor.

Do you dispute that?

THE WITNESS (Hibbard): I -- I am aware there was a tanker on the Accelerate buoy in Boston Harbor. And my understanding, although I haven't independently verified this, is that they were injecting gas at various times.

MS. CSANK: So you agree that the availability of additional liquified gas impacts the system reliability and the prices during a cold snap?

THE WITNESS (Hibbard): I wouldn't distinguish liquefied gas from any other gas in

that respect. Increasing the quantity of gas flowing into New England is going to affect both prices and the reliability challenge, holding everything else equal.

I certainly do believe that the existence of LNG facilities at the eastern end of the New England pipeline system -- and when they're injecting gas it's very helpful to the fuel security reliability challenges in New England.

MS. CSANK: But you would agree that a critical difference between gas that's liquefied versus gas that's not is that that the liquefied gas can be stored. Correct?

THE WITNESS (Hibbard): I wouldn't -- I agree that that's different -- well, the -- there is storage for liquefied gas. I wouldn't say that necessarily makes it more reliable than a firm transportation contract because that gas obviously needs to get to the burner tip of the powerplant over pipelines.

And so unless -- with the exception of what you have brought up several times, a catastrophic event on the pipeline system, I would equate a firm, firm transportation contract for a

powerplant to a powerplant having a firm transportation contract from an LNG facility to its burner tip. I would say that those are essentially the same in terms of assistance with winter reliability.

MS. CSANK: Since you brought it up, sir, are you familiar -- well, that you brought up catastrophic events on pipelines again. Are you familiar, sir, with the pipeline Hazardous Material and Safety Administration?

THE WITNESS (Hibbard): I'm familiar with what they are, yes.

MS. CSANK: And you know that that's a federal agency that's under the U.S. Department of Transportation. Correct?

THE WITNESS (Hibbard): Yes.

MS. CSANK: And they regulate --

THE WITNESS (Hibbard): Well, I'll take your word for it that it's under the DOT.

MS. CSANK: And you, subject to check, would also agree that that agency collects self-reported data on pipeline failures across this country. Correct?

THE WITNESS (Hibbard): I'll accept that. I haven't independently verified that.

MS. CSANK: And the data, subject to check, shows that pipelines built before the 1940s fail at rates comparable to pipelines that have been built in recent years. Correct?

THE WITNESS (Hibbard): Are you referring to interstate pipelines, or local natural gas distribution company pipeline systems?

MS. CSANK: All, sir.

THE WITNESS (Hibbard): Oh, I think the answer is extremely different for the two.

MS. CSANK: Please explain?

THE WITNESS (Hibbard): Well, the local natural gas distribution system, pipeline systems are configured in very different ways than the interstate pipeline system and probably using very different materials.

So I would -- to answer your question, I would want to know specifically what you're referring to and -- and my expectation would be that the answer is different if you're looking at distribution systems, versus interstate pipeline systems.

MS. CSANK: Do you have any documentary evidence to provide this Council on specifically this issue as it relates to this project?

THE WITNESS (Hibbard): I'm -- I'm not sure what the issue is. I do not have the --

MS. CSANK: Is the vulnerability of the pipeline system on which this project would rely -- its vulnerability to failures?

THE WITNESS (Hibbard): I have not reviewed any PHMSA data or -- for this, for this project, and have no reason to have done so.

MS. CSANK: Do you know if anyone else on the panel has?

THE WITNESS (Hibbard): I don't. I suspect not.

MS. CSANK: Mr. Eves?

THE WITNESS (Eves): No.

MS. CSANK: Mr. Hibbard, is it your testimony that the project is uniquely able to reduce greenhouse gas emissions during winter cold snaps?

THE WITNESS (Hibbard): No.

MS. CSANK: Please explain?

THE WITNESS (Hibbard): My understanding of your question. You were asking if it's my testimony that this facility is uniquely able to reduce greenhouse gas emissions. That's not my testimony.

MS. CSANK: So for example, the wind resources that are planned for the system are also able to reduce greenhouse gas emissions during winter cold snaps. Correct?

THE WITNESS (Hibbard): I think that depends on their availability, but if we wanted to compare if a wind facility were able to generate the same megawatt hours during the same time period it would -- and I did a sort of a proxy approximation that I did in my calculation. It would also be able to reduce greenhouse gases.

MS. CSANK: And you do not dispute that wind resources could during the winter cold snap meet customer demand?

THE WITNESS (Hibbard): I can -- what I would say about that is if a wind facility is generating and adding to the grid it can certainly help contribute to meeting reliable system operations during winter peaks.

What I can't say is that that would always be the case, because there could be weather conditions where the contribution of wind facilities is not there -- and that's -- but that's the sort of -- that's the sort of concern that -- that Mr. Eves was speaking about earlier

with respect to variable generation.

But I think the answer to your question is, yes. If a wind generating facility is operating it can contribute to winter reliability.

MS. CSANK: Thank you, sir. If you'll indulge me, just one last line of questions.

Sir, you authored in 2015 -- rather, you co-authored a study for the Massachusetts Attorney General's Office entitled, Power System Reliability in New England, Meeting Electric Resource Needs and an Era of Growing Dependence on Natural Gas.

Do you recall that study?

THE WITNESS (Hibbard): I recall that study, and that's the one we were discussing earlier this afternoon.

MS. CSANK: And that study attempted to answer several questions, the first of which was, could the region experience power system, quote, unquote, deficiencies during peak -- excuse me, during peak winter demand when the electric system may not be able to meet electric demand.

Correct?

THE WITNESS (Hibbard): Yes, that's correct.

MS. CSANK: In addition, the study attempted to address if any such deficiencies are identified what is the full suite of practical options for maintaining power system reliability, particularly during winter months, including but not limited to electric ratepayer funding for gas infrastructure. Correct?

THE WITNESS (Hibbard): Natural gas infrastructure, yes.

MS. CSANK: Or fracked gas infrastructure?

THE WITNESS (Hibbard): No, I didn't say fracked gas. I said natural gas infrastructure.

MS. CSANK: But you have performed no analysis on the type of extraction techniques that are used to get the gas that's conveyed on this infrastructure. Correct?

THE WITNESS (Hibbard): That's correct.

MS. CSANK: You also looked at the cost to electric ratepayers associated with these options and the extent to which the options helped achieve or impede New England states' THG goals and obligations. Correct?

THE WITNESS (Hibbard): I looked at what

would be the relative cost to electric ratepayers associated with the options both to implement the options and as a result of how they affect wholesale electricity prices.

And then to what extent do various options help achieve or impede states' obligations and goals with respect to greenhouse gas emissions.

MS. CSANK: And you found that under the basecase analysis power system reliability can and will be maintained over time with or without additional new interstate gas pipeline capacity. Correct?

THE WITNESS (Hibbard): Under the conditions we were modeling at that point in time and the resources that were available, that was the conclusions we came to -- the conclusion we came to under basecase conditions.

MS. CSANK: But under stress sensitivities you found that power system reliability deficiencies emerge by the winter of 2024/'25. Correct?

THE WITNESS (Hibbard): Not stress sensitivities, stressed system conditions.

MS. CSANK: What's the difference?

THE WITNESS (Hibbard): Well, our analysis there was we weren't running sensitivities of system conditions. We did the basecase, and then we did a stressed system condition case, which was more like the conditions that exist now, but it was involving limitations on oil supply and one or two other things.

But the -- we didn't call it a sensitivity. We did two cases. We did the basecase and the stress system case, and the stress system case is more like the -- the winter cold snap reliability concerns that ISO has when it's discussing this issue.

MS. CSANK: And when you say the conditions are more like what they are now, relative to what reference case or what baseline?

THE WITNESS (Hibbard): Relative to when we did the analysis.

MS. CSANK: Thank you.

And you considered a range of solutions sets including the addition of dual-fuel capabilities, existing facilities and contracting for liquefied gas. Correct?

THE WITNESS (Hibbard): Yes, that was one of the solutions -- that was the status quo,

essentially.

MS. CSANK: But you found that those solutions failed to offer outcomes consistent with the climate change programs and goals of the New England states. Correct?

THE WITNESS (Hibbard): Yes.

MS. CSANK: You also considered adding new gas pipeline capacity. Correct?

THE WITNESS (Hibbard): That adding new gas infrastructure -- and I just want to be clear what this was, because it relates to the purpose of the report.

It was assuming electric ratepayers paid for new pipeline infrastructure. So the electric ratepayers paid the cost of that investment and paid -- as a result that capacity was dedicated for the operation of gas only units within New England.

So it was essentially a scenario that represents firm transportation for gas-fired transportation in New England.

MS. CSANK: I'm not sure I'm following how your analysis that ruled out additional gas on the basis that it failed to offer outcomes consistent with climate change programs and goals

is influenced by who pays for the additional pipelines.

THE WITNESS (Hibbard): The primary purpose of the study -- well, let me back up. And I'm sure that the councilmembers are actually aware of this.

At the time we did this study there was active discussion in the Massachusetts legislature for having electric ratepayers pay for natural gas infrastructure on behalf of competitive market power generators. That was the active debate that was going on at the time, both at the regulatory level and the legislative level.

So the primary purpose of this was to say, okay. Let's figure out where there would be deficiencies on the system and then figure out various ways you can eliminate those deficiencies. One of them was the construction of a new natural gas pipeline into Massachusetts and the capacity of which would be dedicated for electricity generation.

The other -- so that was the basic purpose of the analysis, to compare these solutions sets from that standpoint. We also were interested in saying, okay. Well, there are other

impacts to be considered including, what are the greenhouse gas emissions associated with each option? Not that it would prevent the states from meeting greenhouse gas goals, but it would affect the costs of doing so. So in our analysis that's -- that's why we structured it to look at that as well.

MS. CSANK: Thank you for that clarification, sir.

In that study you also considered a solution set involving a combination of energy efficiency, demand response and renewable energy resources. Correct?

THE WITNESS (Hibbard): That sounds right.

MS. CSANK: And you found that a combination of those resources represents the best solution from the perspective of ratepayer costs. Correct?

It's page 5 -- or it will be, rather. Sorry.

THE WITNESS (Hibbard): Okay. Yeah, I'm at the -- so, yes. We looked at -- I mean, the total, effectively we looked at six scenarios. Of the six one of them was the status quo. It didn't

affect ratepayer costs, because it's the status quo.

One was paying for new transmission to Canada. That was more expensive for ratepayers. The rest of them were less -- were -- created ratepayer specifics. The one that was most beneficial for ratepayers was the EE/DR scenario.

MS. CSANK: And EE and DR would stand for Energy Efficiency Demand Response. Correct?

THE WITNESS (Hibbard): Energy efficiency and demand response, yes.

MS. CSANK: And the customers who would be achieving the most savings under that scenario, under that study would include customers in Connecticut. Correct?

THE WITNESS (Hibbard): Probably so -- no, hang on.

We -- there was an inclusion. I'll accept that that's the case.

MS. CSANK: Thank you, sir.

And further, you found that EE or energy efficiency combined with firm imports of distillate low carbon resources on new or existing transmission lines provides the greatest benefits from the standpoint of greenhouse gas emissions.

Correct?

THE WITNESS (Hibbard): Correct, with the caveat that if you read the report you'll see that this scenario requires that energy be deliverable 8,760 hours per year on the transmission line from Canada. And as we were discussing earlier, it's not clear to me that that's the case with the current projects.

So in order for it to be a winter reliable -- reliability solution that was a condition of that scenario.

MS. CSANK: So thank you. With that caveat your answer is, yes?

THE WITNESS (Hibbard): I think I started with yes. Didn't I?

MS. CSANK: Very good. No further questions. Thank you so much.

THE HEARING OFFICER: Thank you, Counselor. You actually finished right on time. The garage is going to close at 6:30 and I didn't want to interject, but let me wrap this up.

The Council announces that it will continue the evidentiary session of this hearing at its office at 10 Franklin Square in New Britain, on Thursday, May 2, 2019, at 11 a.m. in

hearing room one.

Please note that anyone who has not become a party or intervener but who desires to make his or her views known to the Council may file written statements with the Council until the public comment record closes.

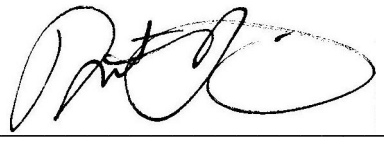
Copies of the transcripts of this hearing will be filed at the Killingly, Putnam and Pomfret Town Clerks' offices.

I hereby declare this hearing adjourned. Thank you all for your participation. Drive safely and enjoy the weekend.

(Whereupon the above proceedings were concluded at 6:06 p.m.)

CERTIFICATE

I hereby certify that the foregoing 299 pages are a complete and accurate computer-aided transcription of my original verbatim notes taken of the Regular Hearing in Re: DOCKET NO. 470B, MOTION TO REOPEN AN APPLICATION FROM NTE CONNECTICUT, LLC, FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF A 550-MEGAWATT DUAL-FUEL COMBINED CYCLE ELECTRIC GENERATING FACILITY AND ASSOCIATED ELECTRICAL INTERCONNECTION SWITCHYARD LOCATED AT 180 AND 189 LAKE ROAD, KILLINGLY, CONNECTICUT, which was held before ROBERT SILVESTRI, The Hearing Officer, at Connecticut Siting Council, 10 Franklin Square, New Britain, Connecticut, Thursday, April 18, 2019.



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