In The Matter Of:

Candlewood Solar, LLC, Petition for a Declaratory Ruling

September 26, 2017
Hearing

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STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Petition No. 1312

Candlewood Solar, LLC, Petition for a Declaratory Ruling That no Certificate of Environmental Compatibility and Public Need is required for the Proposed Construction, Maintenance and Operation of a 20 Megawatt AC (26.5 megawatt DC) Solar Photovoltaic Electric Generating Facility Located on a 163 Acre Parcel at 197 Candlewood Mountain Road and Associated Electrical Interconnection to Eversource Energy's Rocky River Substation on Kent Road in New Milford, Connecticut

Regular Hearing Held at The E. Paul Martin Room, Roger Sherman Town Hall, 10 Main Street, New Milford, Connecticut, Tuesday, September 26, 2017, beginning at 3 p.m.

H e l d B e f o r e:

ROBIN STEIN, Chairman

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

Council Members:

JAMES J. MURPHY, JR.
Vice Chairman

ROBERT HANNON,
DEEP Designee

MICHAEL HARDER
DR. MICHAEL W. KLEMENS
ROBERT SILVESTRI
DANIEL P. LYNCH, JR.

Council Staff:

MELANIE BACHMAN, ESQ.,
Executive Director and Staff Attorney

MICHAEL PERRONE,
Siting Analyst

LISA FONTAINE,
Office Assistant

For DEEP:

KIRSTEN RIGNEY

A p p e a r a n c e s:(cont'd)

For the Petitioner (Candlewood Solar, LLC):

MICHAUD LAW GROUP, LLC

515 Centerpoint Drive, Suite 502

Middletown, Connecticut 06457

By: PAUL R. MICHAUD, ESQ.

For RESCUE CANDLEWOOD MOUNTAIN:

LAW OFFICES OF KEITH R. AINSWORTH, ESQ., LLC

51 Elm Street, Suite 201

New Haven, CT 06510-2049

By: KEITH R. AINSWORTH, ESQ.

THE CHAIRMAN: Good afternoon, ladies and gentlemen. I'd like to call to order the meeting of the Connecticut Siting Council on petition 1312, today, Tuesday, September 26, 2017, at 3 p.m.

My name is Robin Stein. I'm Chairman of the Connecticut Siting Council. Other members of the Council present are Senator Murphy, our Vice Chairman; Mr. Hannon, designee from the Department of Energy and Environmental Protection; Mr. Silvestri; Dr. Klemens; Mr. Harder; and Mr. Lynch.

Members of the staff present, our Attorney Melanie Bachman, our Executive Director; Mr. Perrone, siting analyst; and Lisa Fontaine, our fiscal administrative officer.

This hearing is held pursuant to the provisions of Title 16 of the Connecticut General Statutes and of the Uniform Administrative Procedure Act upon a petition from Candlewood Solar, LLC, for a declaratory ruling that no certificate of environmental compatibility and public need is required for the proposed construction, maintenance and operation of a 20 megawatt solar photovoltaic electric generating

facility located on a 163 acre parcel at 197 Candlewood Mountain Road and associated electrical interconnections to Eversource Energy Rocky River Substation on Kent Road in New Milford, Connecticut. The petition was received by the Council on June 28, 2017.

As a reminder to all, off-the-record communication with a member of the Council or member of the council staff upon the merits of this petition is prohibited by law.

The parties and interveners to the preceding are as follows. Candlewood Solar, LLC, Attorney Michaud -- hope I got it close enough -- representing; the Town of New Milford; Department of Energy and Environmental Protection; the Department of Agriculture; and Rescue Candlewood Mountain, which is a party and CEPA intervenor.

We will proceed in accordance with the prepared agenda, copies of which are available here, also available -- I believe those are in the back -- are copies of the Council's citizens guide to the Siting Council procedures. At the end of this afternoon's session we will recess and resume again at 6:30 p.m.

The 6:30 p.m. hearing will be reserved

for the public to make brief oral statements into the record. I wish to note that parties and interveners, including their representatives and witnesses are not allowed to participate in the public comment session.

I also wish to note for those who are here and for the benefit of your friends and neighbors who are unable to join us for the public comment session, that you or they may send written statements to the Council within 30 days of the date hereof, and such written statements will be given the same weight as if spoken at the hearing.

A verbatim transcript will be made of the hearing and deposited with the town clerks' offices in New Milford, Brookfield and New Fairfield for the convenience of the public.

Is there any public official here at this time who wishes to make a public statement?

(No response.)

THE CHAIRMAN: I wish to call your attention to those items shown on the hearing program marked as Roman numeral 1D, items 1 through 117. Does the petitioner or any party or intervener have an objection to these items that the council has administratively noticed.

MS. RIGNEY: No objection.

MR. MICHAUD: No objection.

MR. AINSWORTH: No objection.

THE CHAIRMAN: Hearing and seeing none, the Council hereby administratively notices these existing documents, statements and comments. The petitioner, present your witness counsel for the purposes of taking the oath.

MR. MICHAUD: Yes, Chairman Stein. I'm going to introduce the panel from my right down the line.

Directly to my right is Jim Walker. He's the Vice President of Solar Grid-Tie Projects at Ameresco. To his right is Joel Lindsay Director of Project Involvement at Ameresco, the project developer.

To his right is Robert Bukowski. He's the principal engineer at Amec Foster Wheeler. He's the engineering consultant to the project. And to his right is Ms. Pamela Chan Senior Project Manager at Amec Foster and Wheeler, environmental consultant to the project.

And lastly, to her right is Mr. Brian Butler. He's the president at Oxbow Associates. He's the wetlands and wildlife consultant to the

project.

I would like to present these witnesses to be sworn in now.

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

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

THE CHAIRMAN: Please continue by numbering and verifying the exhibits in your filing.

MR. MICHAUD: Yes, sir. So the petitioner has ten exhibits today for identification purposes, and it's consistent with Roman numeral 2B in the hearing program.

Exhibit 1, which is Candlewood Solar LLC's petition for a declaratory ruling, including all attached exhibits, dated June 28, 2017; Exhibit Number 2, which is the petitioner's response to Council interrogatories, dated August 28, 2017, and this would be set one.

Exhibit Number 3, which is the petitioner's prefiled testimony of Jim Walker, Joel Lindsay, Robert Bukowski, Pamela Chan and Brian Butler, dated September 19, 2012; Exhibit Number 4, which is petitioner's responses to the Town of New Milford's interrogatories, set one, dated September 19, 2017.

Exhibit Number 5, which is petitioner's proposed affidavit of sign posting and photograph of the sign; Exhibit Number 6 which is petitioner's witness resumes and company qualification and experience; Exhibit Number 7, which is petitioner phase 1A, joint resources assessment survey at the proposed Candlewood Solar facility.

Exhibit number 8, which is petitioner's showing of the Federal Aviation Administration determination of no hazard to air evaluation letters; Exhibit 9 which is petitioner's supplemental sign posting affidavit, which was signed and dated September 25, 2017; and Exhibit Number 10, which is the petitioner's field review map.

I would submit these ten exhibits for identification now, and then continue with the

verification.

THE CHAIRMAN: Okay. Is there any objection?

(No response.)

THE CHAIRMAN: Continue.

MR. MICHAUD: So regarding -- and I'm speaking to the panel. So regarding Exhibits 1 through 10 I will ask each of the witnesses on this panel in turn the same questions, and you can respond to my -- each of you can respond to my question. It's the same question.

So the first question is, did you prepare or cause to be prepared Exhibits 1 through 10?

THE WITNESS (Walker): Yes.

MR. MICHAUD: Mr. Lindsay?

THE WITNESS (Lindsay): Yes.

MR. MICHAUD: Mr. Bukowski?

THE WITNESS (Bukowski): Yes.

MR. MICHAUD: Ms. Chan?

THE WITNESS (Chan): Yes.

MR. MICHAUD: Mr. Butler?

THE WITNESS (Butler): Yes, but I would qualify it with 3C.

MR. MICHAUD: Okay. In what way?

THE WITNESS (Butler): It's part --

THE REPORTER: I'm having trouble hearing you.

THE WITNESS (Butler): I'm sorry. I said specifically with attachment 3C. I wasn't active. I did not have a -- so that some of the other documents proceed mine coming on.

MR. MICHAUD: Okay. Thank you.

And in regard here, do you have any edits, corrections or changes to Exhibits 1 through 10 that you worked on, Mr. Walker?

THE WITNESS (Walker): None.

MR. MICHAUD: Mr. Lindsay?

THE WITNESS (Lindsay): No.

MR. MICHAUD: Mr. Bukowski?

THE WITNESS (Bukowski): No.

MR. MICHAUD: Ms. Chan?

THE WITNESS (Chan): No, not at this time.

MR. MICHAUD: Mr. Butler?

THE WITNESS (Butler): It's of a minor nature. We identified a couple more species of amphibians on the site than were reported in the earlier document.

MR. MICHAUD: And do you adopt Exhibits

1 through 10 as part of your sworn testimony today, Mr. Walker?

THE WITNESS (Walker): Yes.

MR. MICHAUD: Mr. Lindsay?

THE WITNESS (Lindsay): Yes.

MR. MICHAUD: Mr. Bukowski?

THE WITNESS (Bukowski): Yes.

MR. MICHAUD: Ms. Chan?

THE WITNESS (Chan): Yes.

MR. MICHAUD: And Mr. Butler, in regard to your exhibit?

THE WITNESS (Butler): Yes.

MR. MICHAUD: And with that, I would submit Exhibits 1 through 10 as full exhibits now.

THE CHAIRMAN: Does any of the parties or interveners object to these being admitted?

MS. RIGNEY: No.

MR. AINSWORTH: No objection.

THE CHAIRMAN: Thank you. Then they will be admitted. We will now begin with cross-examination starting with staff, Mr. Perrone.

MR. PERRONE: Thank you, Mr. Chairman.

To begin, one minor clarification. Could you explain the relationship between New

Milford Clean Power, LLC, and the petitioner Candlewood Solar, LLC?

THE WITNESS (Lindsay): We possess a lease option with New Milford Clean Power for the property, to utilize the property for the project.

MR. PERRONE: And what is the status of the approval of the power purchase agreement? Because looking at the response to Council interrogatory number two it notes that the PPA was submitted for review and approval to the Mass DPU?

THE WITNESS (Lindsay): Yes. The power purchase agreement has been executed with the utilities, that the signatures are in escrow until the Massachusetts DPU gives its approval of PPAs. They have been -- they have been submitted to the DPU. They were actually submitted on September 20th.

MR. PERRONE: So it's currently being reviewed by the Mass DPU?

THE WITNESS (Lindsay): Yes.

MR. PERRONE: Okay. Is there an option to extend rather than renew the PPA?

THE WITNESS (Lindsay): No, the PPA is 20 years.

MR. PERRONE: On page 10 of the prefile

of Joel Lindsay it notes that the EDC selected the project because it will provide deliveries into the ISO New England forward capacity market.

My question is, has the petitioner participated in, or plans to participate in the ISO forward capacity auction?

THE WITNESS (Lindsay): As part of this we will plan to participate. This -- you mean, previously and other projects? Or --

MR. PERRONE: On this specific project?

THE WITNESS (Lindsay): Right. This specific project has specific conditions in the PPA that have requirements for us to participate in the forward capacity market.

MR. PERRONE: Did you hear anything about possible tariffs being placed on the import of solar panels?

THE WITNESS (Lindsay): I guess only what we have heard in -- in the past few months, and that the USITC has actually ruled for injury for the U.S. solar manufacturers, which has been in the news --

THE CHAIRMAN: Do you have a contingency? If that goes into effect could that affect your project, meaning the cost of solar

panels?

THE WITNESS (Walker): Yes. We have been evaluating contingencies and looking at alternative panel design -- so looking at alternative panels. So not all panels are governed by that tariff. We're looking at panels that are not governed by that tariff, and have been in conversations with a manufacture for solar that makes those alternative panels.

MR. PERRONE: Moving onto the Federal Aviation Administration review, I understand multiple no-hazard letters were filed. How were the locations chosen? Did you pick the center of the facility, or the corners of the facility and the locations of the interconnection poles?

THE WITNESS (Lindsay): We picked locations all along the interconnection, but we also picked locations around the full perimeter of the solar facility, and also within, you know, we tried to cover the entire extent of the solar facility.

MR. PERRONE: And those no-hazard letters, is it correct to say that they're related to the height and location of the facility? They have nothing to do with the glare analysis itself.

Is that correct?

THE WITNESS (Lindsay): Yeah. There is no glare analysis specifically required by the FAA in this instance.

MR. PERRONE: But is it correct to say that the petitioner did submit the glare analysis to the FAA for their review?

THE WITNESS (Lindsay): We submitted it and that may be the -- we submitted it to the Siting Council and we are submitting it to FAA.

MR. PERRONE: And in the Town of New Milford's Zoning Commission letter, the commission had recommended the information on the glare analysis be provided to Candlelight Farms Airport. Has the glare analysis been provided to the airport?

THE WITNESS (Lindsay): No, we haven't provided it specifically to them, but we've -- as you know, we've made it available through the Siting Council through our submittals.

MR. PERRONE: And in the comments from the Connecticut Department of Transportation it talks about the possibility of a highway encroachment permit being required.

If this project is approved would the

petitioner apply for a highway encroachment permit for work performed within the Route 7 right-of-way?

THE WITNESS (Lindsay): As necessary we will do that. Part of that will be determined based on the finalization of the impact study from Eversource in terms of the division of work at the location where we interconnect adjacent to Route 7.

MR. PERRONE: And I'm going to move onto the electrical interconnection now more specifically. On page 11 of the petition it notes that the power would be rounded through two 13.8 kV conductors. Did the petitioner intend to say, two circuits?

THE WITNESS (Lindsay): They are two conductors running from the facility to the interconnection point. You know, specifically if you call it two circuits it's essentially, you know, they're splitting the output of the -- of the array on those two conductors. So the full output would go -- would be split more or less evenly along those two conductors.

MR. PERRONE: So two conductors per phase?

THE WITNESS (Lindsay): No. No. They would be each of the conductors -- each of the conductors essentially would be a three-phase assembly.

MR. PERRONE: Okay. I see. And would those proposed interconnection poles be wood to match the wood surroundings?

THE WITNESS (Lindsay): Yes.

MR. PERRONE: And I understood you've already provided the approximate height of those structures, but just as a comparison do you know the average tree height in the vicinity of the interconnection?

THE WITNESS (Lindsay): It tends to be essentially in the -- in the range of 60 feet, 50, 60, maybe as much as 70 feet.

MR. PERRONE: In the interconnection route design did the petitioners seek to keep the pole locations out of wetland areas to the extent that the spans allow it?

THE WITNESS (Lindsay): Yes, to the -- to the maximum extent we have done that, that's been part of our routing analysis.

MR. PERRONE: Did you find that you couldn't completely avoid wetlands?

THE WITNESS (Lindsay): There's one area where we -- we couldn't completely avoid. We're not in the wetland, but we are going to need to trim some trees that are in the wetland. Not remove them, but cut trees just to avoid interference from trees. And that's in our approximately 2,000 square foot area of one wetland.

MR. PERRONE: So you wouldn't have any actual direct impact where the pole would be physically in the wetlands?

THE WITNESS (Chan): Could I just clarify? There are no poles or guy attachment locations in the wetlands. The wetland impacts that you're discussing are actually broken out. There's four different wetland crossings, and there will be some tree clearing in those areas. It would be above ground. No stump removal. No soil disturbance at all. So --

MR. PERRONE: One final question on the electrical interconnection topic. In DEEP's comments DEEP mentions that placing the interconnection lines underground would be extremely difficult and disruptive, and lists several reasons.

Does the petitioner agree with that, that an underground route would be difficult and disruptive?

THE WITNESS (Lindsay): I would say, generally yes. I mean, we would say we would prefer an aboveground route at this point.

MR. PERRONE: Moving on to Council interrogatory response 65 where it talks about the vertical screw post being installed by a self-propelled screw drilling machine. So is it correct to say that the post would be spun into the ground rather than hammered or driven into the ground?

THE WITNESS (Bukowski): Yeah, that's correct. In some cases they may predrill the hole with a diamond bit if there's places that have shallow bedrock. But yeah, it's basically a ground screw so, it gets spun into the ground.

MR. PERRONE: We've had some projects where they're actually driven into the ground. Is having it spun into the ground by a screw machine quieter than driving it into the ground?

THE WITNESS (Bukowski): Yeah, it's -- I mean, it the sound of a drill rig really going through. It's probably a little bit quieter, but

you know, in this terrain a driven post just wouldn't work very well.

MR. PERRONE: In the Town of New Milford's Zoning Commission comments dated September 11th there are several recommendations. Actually there's four at the end. One is requiring a 100-foot landscape buffer along the property's frontage on Candlewood and along common property boundaries with single-family.

Has the petitioner looked at that and would you be able to accommodate that?

THE WITNESS (Lindsay): We have not looked at that to date.

MR. PERRONE: Have you looked at the proposed restriction on construction hours which would be item number three?

THE WITNESS (Lindsay): Our intent was to comply with New Milford's stated construction hours and not go outside of those.

MR. PERRONE: And I understand that attached to the DEEP comments is a storm water management memo with recommendations at the end to minimize storm water impacts. Would the petitioner be willing to comply with those recommendations?

THE WITNESS (Lindsay): I would say, yes, and we just started to do our review of those. We actually plan to meet with DEEP and their staff, the storm water staff to review the storm water design also.

MR. PERRONE: And moving onto historic resources, I understand that the petitioner is proceeding with the phase 1B cultural survey. We have the 1A before us. Has the -- oh, let me backup a second. The phase 1A survey, my understanding is that has been submitted to SHPO.

Have you received any comments to date on that?

THE WITNESS (Chan): No, not yet.

MR. PERRONE: And the 1B cultural survey, when that's ready, that will also be filed with SHPO?

THE WITNESS (Chan): Yes, and we'll will submit a copy with the Council.

MR. PERRONE: And moving onto response to Council interrogatory 48, this is the carbon debt analysis. An EPA number is provided for CO2 displaced per kilowatt hour that you put into the grid.

Is it fair to say that that's a national

number based on how the grid looks today?

THE WITNESS (Lindsay): I think that's fair to say.

MR. PERRONE: Okay. And so as a caveat, is it also correct to say if that's the annual carbon dioxide being displaced, that's an approximation because the grid portfolio can change over time?

THE WITNESS (Lindsay): I would agree with that.

MR. PERRONE: Okay.

Thank you. That's all I have.

THE CHAIRMAN: Thank you. Now we'll continue with Senator Murphy.

MR. MURPHY: Thank you, Mr. Chair. I just have a few questions.

You indicated that in response to the first question from Mr. Perrone that it's a lease action under which you will be going in and taking title?

THE WITNESS (Lindsay): Yes.

MR. MURPHY: How long is the lease for?

THE WITNESS (Lindsay): The lease is a 20-year lease.

MR. MURPHY: And at the end of the

20-year term does, as most leases would, the title would revert back to whoever is your lessor?

THE WITNESS (Lindsay): Yes.

MR. MURPHY: How do you talk in terms of giving permanent easements as a part of discussions with planning and zoning as to the upper portion and so forth if all you have is a 20-year lease?

Counsel, maybe you can enlighten me as to how you pull that trick off. I don't know that I could have done it in my days of practice, but --

MR. MICHAUD: The project is negotiation with the land owner. So it would be in agreement with the landowner.

Yeah, so the project is in consultation with the landowner on this so they're speaking, and we've been representing that it's in consultation with the landowner.

MR. MURPHY: So the lease that your client would be receiving as the tenant for 20 years would have the proviso that as a tenant the tenant could bind the property for whatever environmental easement might be worked out between these land trusts that you've indicated, that the

applicant would be willing to do?

MR. MICHAUD: We could do that or we could have the land owner --

MR. MURPHY: It seems quite fuzzy to me that you go in for 20 years, but you're able to leave something behind which may be in perpetuity.

MR. MICHAUD: Yes. So our original lease is for 20 years, however in order to help move the project along we have entered into talks in regard to what happens after 20 years. So that hasn't been finalized yet, and until it gets finalized, you know, we don't have a definitive answer on -- in regard to the lease.

MR. MURPHY: And when might this be finalized?

MR. MICHAUD: Once we come to an agreement with DEEP, for example.

MR. MURPHY: That's as good an answer, I suppose, as I'm going to get.

THE CHAIRMAN: Mr. Hannon has a followup.

MR. HANNON: I just want to follow up. You're talking about a 20-year lease, but I thought in one of the documents it also talks about up to two 5-year extensions. So what are we

really talking about?

Are we talking about just 20 and that's it? Or is there a possibility of going up to 30?

THE WITNESS (Lindsay): The PPA with the utilities is 20 years, and that's it. And then there's a provision to allow for potential extensions to the lease.

And also in the pilot agreement with the Town there's a potential extension of the pilot agreement for five years.

MR. HANNON: Okay. So in the lease itself there's the option of two five-year extensions?

THE WITNESS (Lindsay): Yes, I need to double check, but I think it's two. I think it's two five-year extensions.

MR. HANNON: Okay. Thank you.

MR. MURPHY: The reason I raise this issue is because it came to mind in reading this that I think that the fact that these environmental easements might be entered into for a period long past the 20-year lease, the consideration that people had made and how this thing has been thought of.

I was just wondering how it was going to

be done, and I'm concerned to be sure that it can be done. And I'll leave it with that, but when you finalize we'd certainly appreciate knowing how that particular consideration is going to be taken care of, because I assume it will be taken care of.

MR. MICHAUD: That's correct. We will inform the Council.

MR. MURPHY: Okay. Thank you. I have just a couple of other questions.

On the interrogatories from the Council the question of traffic during construction, I know the question dealt with construction vehicles which amounts to a very small number.

How many employees of various concerns will be there from time to time working who will have vehicles that will also amount to traffic to and from there, which I think is a consideration for us?

THE WITNESS (Lindsay): At any one time there could be 50 to a hundred employees there.

MR. MURPHY: And presumably they don't do an awful lot of carpooling.

THE WITNESS (Lindsay): Who knows?

MR. MURPHY: The noise information

basically is from where the hookup is with Eversource. Is there any noise report or what have you on the drilling and what have you as to what the sound might be in the sectors off the property when construction is going on?

THE WITNESS (Bukowski): I -- I don't have information on hand as far as the decibel level of the drill rig.

MR. MURPHY: And if anybody knows, does New Milford have a noise ordinance? It talks about DEEP's noise requirements. Many towns have their own noise ordinances.

THE WITNESS (Chan): Based on our review at the time we were preparing materials we were not able to find anything. So I don't believe they do.

MR. MURPHY: Okay. I think for now, Mr. Chairman, that's all I have today.

THE CHAIRMAN: Thank you.

Let's continue with Dr. Klemens.

DR. KLEMENS: Thank you, Mr. Chairman.

My questions are going to be quite narrowly focused. A lot of us on the Siting Council have concerned themselves with the technical aspects of how this project may be

constructed. I want to move us back to the fundamental question of whether this site is an appropriate location for such a project, and do we have sufficient information concerning the natural resource bias of this site to make an informed decision on the petition now in front of the Council.

I have three sets of questions. The first set is going to focus on the adequacy of natural resource data. The next set will focus on vernal pools, and the final set will focus on the state listed threatened slimy salamander.

So my first question that the applicant -- and I assume that most of these questions are going to be directed to Mr. Butler -- is to ask for a brief response to the letter from Carl Wagner from CEQ.

Specifically, that the analysis of vegetation and wildlife are inadequate, and therefore an informed decision from the Connecticut Siting Council is not possible. And also elaborate on the assumptions that wildlife will move away from disturbances.

THE WITNESS (Chan): I'm going to actually start responding to that, and then Brian

certainly can -- can add to my response, and we will keep it brief.

Amec Foster Wheeler prepared the environmental assessment. Mr. Butler was brought on to assist us with, in particular, with listed species questions and issues. He also has reviewed materials that we've provided and prepared, and is very familiar now from his time in the field with -- with the site.

Our approach to the overall question of site suitability for wildlife, vegetation, et cetera, is basically that we recognize that it is a -- it is a large natural habitat full of a wide variety of species currently, presumably.

Fundamentally on a project of this scale when you're doing this amount of clearing and alteration of habitat you're going to have impacts to whatever species are out there. They are going to have no choice essentially but to move elsewhere or be impacted. Our primary concern has been the focus on listed species.

At the time of the preparation of the EA we had not yet received a response from natural diversity. We were looking at the site in a general manner and we are focusing in on the

listed species issues now.

I'm not sure if you have more to add based on your knowledge of the site?

THE WITNESS (Butler): And it also predates my involvement, but -- thank you.

Dr. Klemens. I think Mr. Wagner's, the gist of it is that the native species, rare -- rare or common will not simply be displaced and go elsewhere. And I think he's correct in that assertion that there will be impacts to at least common wildlife at any kind of land change use such as this, or anything analogous to it from an early forested environment to a grassland environment. There will be displacement.

There will be a change in, a reduction in diversity overall, a change in the character of the landscape. So that I think was his main criticism, that and the fact that a breeding bird survey hadn't been executed, and I think we've resolved that based on habitat season analysis internally, at least.

It hasn't been elaborated onto the board, but we are quite convinced we have a fairly comprehensive understanding of the golden wing warbler status on the site, which is negative.

And if there's other specifics in his response I'd be happy to try to address those to you, too.

DR. KLEMENS: Thank you.

Now I want to turn to Starchild's recommendation in his letter that the Connecticut Siting Council should reject Petition 1312 without prejudice until such time as the petitioner and their agents can address all these necessary environmental and possible threatened species concerns.

THE WITNESS (Chan): Well, I guess I will -- I will state that we are certainly working through the listed species issues with the Natural Diversity Database folks. We're in the process of preparing our response to their -- response to our initial request for information.

We fully intend to address the species that they've identified. There, there are broader issues that he addresses in terms of the value of the overall forested habitat there.

I'm not -- I disagree with his position that you should not move forward on our petition, but I'm not quite sure what you're looking for.

DR. KLEMENS: What I'm trying to ask is obviously you have -- and I'm digressing from my

prepared remarks, or my prepared questions -- is you're basically assuming that this Council should be able to render a decision without all this data.

All this data will be provided to us in the course of when the hearing is open. I mean, we have this hearing. We have another one, possibly another one. We have a decision that has to be made around the 20th, 21st of December. When are all these data going to become available?

When are these data going to come available, not only to the Council, but to all the other interested parties, the interveners and other interested people to look at these data?

THE WITNESS (Chan): Specific to the Natural Diversity Database species that have been identified we are moving forward to prepare that information and prepare a submittal prior to the October 31st hearing.

And it would be submitted to the Council, of course, and all the parties.

DR. KLEMENS: Thank you.

THE CHAIRMAN: Excuse me.

Mr. Silvestri has a question?

MR. SILVESTRI: Thank you, Mr. Chairman.

I want to make sure I understand this correctly. Have any on-site surveys actually been conducted by you folks for the wildlife aspect of it? I'm going to leave the vernal pools and the wetlands for Dr. Klemens, but actual on-site surveys?

THE WITNESS (Butler): If you could please define what we've -- well, I'll tell you what we've done. We've looked at things specific for the rare and endangered state listed species. My firm has been engaged to look at those facets of the project.

So we've done surveys. We've done a number of cover objects. To term we've spent about 24 site hours on the site with myself and another geologist who did his master's degree on Plethodontids, and salamanders -- which is the group of salamanders that is targeted there for -- as a threatened species.

So we have not done a comprehensive wildlife in a general case. Some of that information was submitted prior, but we are looking at the state listed species which are elaborated upon in Mr. McKay's letter of July 10th, I think, which would be wood turtle, box

turtle, slimy salamander, golden wing warbler and I believe that -- and bats. So the bat species, which were not present.

MR. SILVESTRI: So I'm looking at other than birds and reptiles. For example, have deer wintering areas been identified anywhere within the site or in relation to the site?

THE WITNESS (Chan): We have not specifically looked at that issue.

MR. SILVESTRI: And anything else for the larger animals, the coyotes, the fox, et cetera? I take it you haven't done any type of survey for animals of that type.

THE WITNESS (Chan): No.

MR. SILVESTRI: Thank, you Mr. Chairman.

DR. KLEMENS: Going back to submittals, Tim Abbott of the Housatonic Valley Association stated concerns concerning the regional significance of this core forest as well as the impacts upon the fragile cliffs and talus slopes caused by clearing other associated impacts in the interconnected lease area.

Can you elaborate on the significance of the core forest and on the potential impacts to the cliffs and talus slopes, particularly how it

may impact the state threatened slimy salamander?

THE WITNESS (Butler): Yeah, in other words, specific to the interconnect that you're speaking of?

DR. KLEMENS: Mr. Abbott spoke very specifically about his concerns about the interconnected lease area, the clearing over the talus slopes and cliffs?

THE WITNESS (Butler): There is an area just to the east of the field where we all -- or the council members just visited the larger kind of odd-shaped polygon field where the interconnect begins and then runs cross country via the reservoir and down to Route 7.

There's a short distance there, a fairly steep slope talus or fragmenting limestone and mature trees, hickory and oaks and other species of matures.

So there is an impact that will be a linear -- probably in the order of 30 feet wide, but a linear distance at a tangent, or at a diagonal to that slope of, I'm guessing, maybe 3 or 4 hundred feet. After that it goes down into the valley where the outlet for the reservoir is at the base of the dam. And then upper mesic

forest slope and then it intersects the access road for the reservoir and runs for, I think, about a mile and change along parallel to that road. So it's already a completely fragmented situation there.

The fragmenting of the forest is arguable because where the interconnection alignment leaves the array field is essentially adjacent to the largest horse pasture on the site now. So once you're inside the forest it's not fragmented, but it's not fragmented by a 300-foot buffer to -- to any disturbances. Fragment -- it's in attached forest only, you know, a hundred feet back to the fields.

DR. KLEMENS: I think you sort of conflated the two parts. The first part of the question -- let's go back to the lease, to the interconnected lease area.

THE WITNESS (Butler): Sure.

DR. KLEMENS: You now said you're going to have an impact, a 30-foot wide impact. Can you comment on when you cut into 30 feet of mature forest and clear it, what are the extent of impacts on both sides of that area?

Desiccation, sunlight, invasive plants?

It may be a 30-foot cut, but how far is the penetration of that impact on each side of it, sort of like a highway sort of analysis?

THE WITNESS (Butler): Yeah. There's -- there's an offset effect on the microclimate of the soil forest community. And there's been a number -- I'm sure you're aware of, a number of academic papers that some say it reaches out, you know, 300 meters if you're looking at invertebrate densities and species composition. I'm not sure I'm entirely convinced of that.

But there's an influence greater than 30 feet. There's more opportunity for blowdowns in the wind, windthrow and it will be either dry -- the humidity gradient is going to change because it can act as a wind corridor that there's none present currently.

But the forest that's specific to the interconnect going from the lower field to the Candlewood outlet or Candlewood overflow is not a core forest component as it stands right now.

DR. KLEMENS: So it would be correct to say then that the development footprint is 30 feet wide, but the ecological footprint is many orders of magnitude larger based on desiccation, the

things you said, the invertebrate community?

THE WITNESS (Butler): I would not concede that it's orders of magnitude greater, but it certainly reaches -- extends beyond the 30 feet. It's not a wall of influence.

DR. KLEMENS: Well, you said up to 300 meters in some studies?

THE WITNESS (Butler): There's literature out there, yeah, that has made claims, you know, in the forestry rows in large, intact forest systems. But I don't think you can measure particularly in this system where it's mostly bedrock. There's not a lot of soil development out there.

I don't think the influence is going to be measurable and orders of magnitude outside that border. If you came back in 50 years the community I don't think would be in any measurable way a different community with the exception of some insolation at the ground surface and the underground surface to make it more of an understory development than is there now.

DR. KLEMENS: So let's get back to Mr. Abbot's other part, this actual concept of core forest. What is the impact? We looked at the

site. There's a large forest block northward toward the highest point on Candlewood Mountain. That's part, according to Mr. Abbott, I believe, of the very large forest block, core forest block. What are the impacts of losing that core forest block to the biodiversity of the state, to the wildlife values of the State?

THE WITNESS (Butler): That will certainly change. On site there's a finite amount of core forest, but as part of a larger system there's probably 7 or 8 hundred acres of contiguous forest with virtually de minimus interruptions or intrusions.

So the array field will diminish the diversity, diminish the volume of core forest by definition by pushing the edges of the remaining forest closer to -- closer to the disturbance, closer to open canopy. So there will be a diminution in forest interior bird occurrences, and some of the larger mammals will react accordingly to that.

So there will be a change in the character of the landscape, that core, the whole core forest concept from clear is meant to kind look at these large landscape areas, because they

are in diminishing occurrence throughout New England. So there will be a change. There will be a diminution of forest, but --

DR. KLEMENS: Does this drop the different kind of thresholds on core forest significance? Does the loss of these 70 some acres push it below or change its status as a core forest block?

MR. MICHAUD: Before we answer that question I just have a request, Chairman Stein. We'll be in a better position to answer these questions once we submit our study we spoke about earlier.

At this point we haven't submitted a -- perhaps by the -- we indicated we would submit it by the next hearing. Perhaps those questions are better suited for the next hearing?

THE CHAIRMAN: I would rather let -- Dr. Klemens has the opportunity. I think it's valuable for Dr. Klemens to ask the questions now.

The respondents can answer to the best of their ability now or they can also say we are -- as they have said, provide that additional information, but I want to make sure that Dr. Klemens questions are on the record now.

You still have something?

MR. MICHAUD: I'll withdraw the request. Thank you.

THE WITNESS (Butler): I think, just to follow up there will be -- not under site control, but in that system that will be still greater than 250 to 500 acres of intact core forest that's partially within, partially not within our border.

DR. KLEMENS: Thank you.

And I also have a very specific question to you, Mr. Butler, with experience and respect to an environmental scientist. I've watched your work for many years.

Do you contend that the data submitted is sufficiently comprehensive and robust to allow the CSC to make an informed decision on the merits of this petition vis-a-vis the impact on natural resources and on threatened and endangered species.

THE WITNESS (Butler): Okay. I'm not always sure when you're finished with your question.

Simply no, not this time, but prior to the October 31st I think we will have sufficient information for the Council to make an informed

decision in that regard.

DR. KLEMENS: Thank you.

Concerning the golden winged warbler, on page 8 of your prefiled testimony there's a lengthy discussion of how you are unable to conduct the surveys in the optimal time period made, but then concluded that there was virtually no probability of breeding predator species because of habitat conditions.

I ask you the question, might not these conclusions be more robust and credible had surveys actually been conducted in the optimal time of year?

THE WITNESS (Butler): That's -- part of that answer is in response to the McKay letter from July 10th where they suggested, she suggested the surveys be done for the golden warbler, and we would agree to that site unseen. I would agree that that was the most -- an empirical assessment would be the most definitive.

But having seen the site, and studied it at least superficially -- or at least seen the entirety of the open possible candidate areas which are the three pasture lands. Those don't meet any of the criteria that are requisite for

bringing by golden winged warbler. And I can elaborate a little bit.

Golden winged warblers have a very tenacious breeding condition which is basically a forest clearing or other disturbance, fire, hurricane, tornado, that kind of disturbance in a period from 2 to 9, or 2 to maybe 18 years post manipulation, post perturbation. They can't -- they are a forest bird, but they breed exclusively in mid successional, early to mid successional habitats. And those are just very fleeting in New England at large since the abandonment of a lot of agricultural lands.

That land type does not persist naturally in the environment on its own. So there they've been in rapid decline since probably the forties or fifties in New England, and it's probably accelerated in the last 20 years.

So the pastures that are there are heavily used. You saw there was animals in there. They've been cropped. There's no secondary growth, no abandonment of pasture anywhere on that site that would provide a habitat that's even -- even any approximation of the type of habitat needed by that species for breeding. So I don't

feel that empirical surveys have any merit given what we've seen on the site itself.

DR. KLEMENS: Thank you.

You've answered the golden winged warbler. How about the other 20 bird species that people have talked about? Mr. Boule spoke about it in his letter. Carl Wagner spoke about it.

There's no breeding bird surveys because I understand this whole application was constructed after the optimal time to conduct breeding bird surveys.

So here's a question that you may take umbrage with. But in short, isn't this application really a hasty compilation to meet administrative deadlines rather than well-planned studies of the site that maximizes seasonal opportunities for the detection of significant species? And this is across the board.

THE WITNESS (Butler): I'll start, but -- and the other members may want to -- the petition to DEEP was April of this year, and the response was July 10th. So by that time any window for that opportunity was virtually already eclipsed for any kind of empirical breeding bird survey. And my charge has been with the rarities

rather than the, you know, the general wildlife, as another gentleman asked earlier.

So essentially between April -- if the response were more forthcoming -- and I know there's logistical issues with staffing and response time with these state agencies. I'm not being critical, but because the response came after the breeding there really wasn't a lot of -- we couldn't really turn back the hands of time and try to address that empirically.

DR. KLEMENS: Why couldn't it have been done next year during the full season and then submitted? I mean, we would have had full data.

THE WITNESS (Butler): I'll leave that to the --

THE WITNESS (Lindsay): The project is under contract under the guidance of the utilities and with the landowners for the lease option, and will be with the interconnection. So we are -- we are under contractual obligations to meet, and that's why we're during as thorough job as we can and hiring the experts that we can to get the best results that are available.

DR. KLEMENS: Thank you.

Let's go to vernal pools. You state in

record that wetland five is a tier one vernal pool?

THE WITNESS (Butler): Yes.

DR. KLEMENS: That's using the criteria of Calhoun and Klemens. Correct?

THE WITNESS (Butler): Correct.

DR. KLEMENS: Okay. In your response to Connecticut Siting Council Interrogatory Number 60, pages 23 and 24 there's a rather convoluted and not -- what I thought nonresponsive answer to a straightforward question posed by Council staff. So I'm going to ask you again for the record.

Is approximately 23.3 percent of the critical terrestrial habitat of Woodland five going to be cleared, i.e., lost as part of the project? It's a yes or no answer.

THE WITNESS (Chan): I will clarify that. The actual percentage for just the CT area is 24.9.

DR. KLEMENS: 24.9. It's gone up.

THE WITNESS (Chan): Well, the -- and that's why the response was worded the way it was, was because the way we stated it. The 23.3 in the petition, for whatever reason we wrote it as of the entire vernal pool environment, including the

pool in the 100-foot envelope. We should have focused on the CTH only, but we -- we didn't. We just defined it slightly differently. We make that statement in the EA, that it is the entire vernal pool environment, 23.3.

So I was trying to make it clear that the 23.3 was with respect to that entire larger area. I should have added that specific to the CTH it's only -- it's 24.9.

DR. KLEMENS: So basically you were one tenth of a percentage point below the threshold for acceptable development?

THE WITNESS (Chan): Right.

DR. KLEMENS: With the critical terrestrial, because there is no development in the pool?

THE WITNESS (Chan): That's correct.

DR. KLEMENS: No development in the envelope?

THE WITNESS (Chan): That's correct.

DR. KLEMENS: So it's 24.9 percent development in the critical development terrestrial habitat?

THE WITNESS (Chan): That's correct. And in fact, I'll just add that it was designed to

meet those guidelines.

DR. KLEMENS: Thank you.

Is wetland five the only vernal pool that could be potentially impacted on the subject property?

THE WITNESS (Chan): Yes.

DR. KLEMENS: That DEEP was complementary of your efforts to conserve wetland five, did they ever ask you whether there were other vernal pool resources on the site?

THE WITNESS (Chan): They have not asked us that, and the wetland delineation that was done did not identify other vernal pools.

DR. KLEMENS: Have you assessed or are you familiar with cryptic vernal pools and the definition of cryptic vernal pools?

THE WITNESS (Butler): I'm familiar with the definition. We have not formally assessed. We acknowledge that the wetlands that you and I looked at today has vernal pool characteristics, at least secondarily or implicit from what was observed there. We were not there during breeding season, but --

DR. KLEMENS: Let's discuss the cryptic vernal pool, which is in Calhoun and Klemens.

It's basically an area within a larger wetland that has vernal pool functions as defined by the presence of indicator species.

This afternoon we went to the area together of that wetland. We flipped a log. We found a marbled salamander. We found four-toed salamanders. We saw about 20, more or less, wood frogs as well as spring peepers and a red eft and bufo americanus, American toad.

So have you considered that large portions of wetland one may be indeed a cryptic vernal pool based, not only on the morphology, but also on the biota that we saw this afternoon?

THE WITNESS (Butler): Myself, I hadn't -- my charge has been strictly with the rare and endangered. So I, to be honest, I hadn't examined that aspect of the submittal.

DR. KLEMENS: Okay. As someone who's looked at a lot of vernal pools, would you say that is a cryptic vernal pool, that large area?

THE WITNESS (Butler): Yeah, the hydrology and the secondary indicators we saw. Yeah.

DR. KLEMENS: Yes. Okay. So we've established in fact that there's another vernal

pool on the site.

Now you were on site in September of this year. Was there any effort, other than the half hour we spent together today, expended on searching wetland one or wetland five for the presence of autumn breeding marbled salamanders?

THE WITNESS (Butler): Yes. Wetland one, I spent probably 30 or 40 minutes turning objects. And still there's a little bit of saturation and water in the gulch there between the two escarpments that contain that.

As I related to you in the field, I didn't find any marbled -- I kind of fully expected to find adults there, but didn't find them under maybe two dozen cover objects.

I did not spend time specifically interior to the wetland -- I'm sorry. Did I say wetland one? Flip that, yeah. Wetland five, rather.

Wetland, one I did not spend. We were focusing on particularly slimy salamander occurrences. So we worked the area on the easterly side of that, but not -- and in some areas that are jurisdictional wetlands, but not throughout the defined wetland because we didn't

expect to find slimy salamanders in the wettest recesses there in all likelihood.

DR. KLEMENS: And you agree, marbled salamanders are considered a vernal pool indicator species as per Calhoun and Klemens?

THE WITNESS (Butler): Yes.

DR. KLEMENS: Great. Let's direct your attention to sheet E-101 in the petition, dated 28 July, 2017, illustrating the arrangement of the solar arrays.

Can you comment on the impacts to wetland one, both its biodiversity and wetland functions if in fact it's subsequently determined you have a cryptic vernal pool? Or in short, would this pool be as well protected as wetland five in terms of critical terrestrial habitat?

THE WITNESS (Butler): Are you asking just -- I was looking at this and trying to listen to you at the same time. Are you asking does it respect the guidelines?

DR. KLEMENS: I'm asking you, do you think that pool is as well protected as wetland five in terms of its critical terrestrial habitat based on the arrays that are shown in sheet E-101?

THE WITNESS (Butler): No, it doesn't

have the same horizontal offsets. It doesn't have as much buffering.

DR. KLEMENS: It doesn't have as much critical terrestrial habitat?

THE WITNESS (Butler): Right.

DR. KLEMENS: So you would assume that possibly that vernal pool is actually going to slip into the noncompliant status?

THE WITNESS (Butler): As a result of the -- yeah, proposed, yes. It wouldn't follow the guidance.

DR. KLEMENS: If wetland one is a cryptic vernal pool, which we've determined, wouldn't it be reasonable to expect that vernal pool indicator species using that wetland for breeding would heavily depend on the forested areas to the west of the pool that would be cleared as per sheet E-101?

THE WITNESS (Butler): Yes, that I would expect the species utilizing -- the terrestrial species using that pool to radiate out in virtually all directions including to the west where the proposed area is.

DR. KLEMENS: Can you comment on the effects that vernal pool amphibian larvae have

upon nutrient cycling and energy transport within the forest biome?

THE WITNESS (Butler): The amphibian -- well, the larvae -- post metamorphosis? You mean, the larvae don't have a tremendous -- they cycle within the wetland system. Are you speaking specifically of terrestrial impact?

DR. KLEMENS: I'm asking within the larvae, which is the aquatic amphibian larvae, what effect will they have upon nutrient cycling and energy transport within the forested biome?

THE WITNESS (Butler): The last word you said, the forested?

DR. KLEMENS: Forested biome? I'm sorry.

THE WITNESS (Butler): Okay. Biome. Yeah, their primary influence on energy and nutrient cycling is post metamorphic.

I mean, unless I may be missing something that you're asking, but I mean, it certainly has a significant impact on the energy cycling in the terrestrial environment after they leave, more so after they leave the pond as metamorphosed adults, but that doesn't seem like what you're asking.

DR. KLEMENS: Well, yes, in a way it is. So where is that energy actually obtained from?

THE WITNESS (Butler): From the nutrient systems within that wetland, transported out into the terrestrial environment and cycled back.

DR. KLEMENS: Correct. Correct.

Are you aware of the River Sound court case here in Connecticut as it pertains to implications for vernal pool conservation and as it pertains specifically to the quality of water within a wetland?

THE WITNESS (Butler): I would have to admit only tangentially. I believe I recall it being discussed at one of the Connecticut wetland scientist meetings that I attended, but I don't -- I couldn't elaborate on it.

DR. KLEMENS: Because where I'm going with this is we had a huge number of wood frogs we saw in that pool today. We saw 20. We saw adults, subadults.

If those wood frogs suffer a significant population decline because of the loss of forested habitat under the arrays on sheet E-101, can we anticipate changes in the water chemistry and nutrient levels in wetland one as per the findings

of River Sound?

THE WITNESS (Butler): Yes, there will be cycling of amphibian, protein, could be whatever. Calories will be affected.

DR. KLEMENS: So we may have more nutrification of the wetland because of the potential loss of those wood frogs?

THE WITNESS (Butler): That's possible. I don't know that it would be eminently measurable without some real fine scaled analysis, but it's certainly possible, yes.

DR. KLEMENS: But just to wrap up, basically the vernal pool is not going to have the level of protection of wetland five?

THE WITNESS (Butler): Yeah, I think that's evident from the --

DR. KLEMENS: And it may be measurably -- have higher biodiversity values. We have marbled salamander in there. We also found four-toed salamanders in there and wood frogs. So in fact it may be a much more valuable vernal pool resource than wetland five potentially?

THE WITNESS (Butler): Yeah, wetland -- wetland five is not a vegetative wetland. It's more of a basin, you know, a trough that collects

organics, but there's not a tremendous amount of vegetation in that. There is more --

DR. KLEMENS: Structural complexity in that particular wetland?

THE WITNESS (Butler): That's more of a pool. This is more of a forested wetland or shrub wetland.

DR. KLEMENS: Thank you.

Okay. The last set of questions is going to deal with slimy salamanders, which is a state threatened species. And I understand you were only made aware of the presence of slimy salamanders in July.

Today on the site walk we uncovered a small, jet black salamander that disappeared in the duff layer with rapid, sinuous movements. Now you said it might be a lead-face. Could it also have been a juvenile slimy salamander?

THE WITNESS (Butler): It could have, yeah. It was a slender and a very rapid motion. So, yeah.

DR. KLEMENS: Okay. Can you detail your experiences with locating slimy salamanders at their northeastern range limit in Western Connecticut?

THE WITNESS (Butler): I have not observed them in Northwestern Connecticut. I have observed them in southeastern New York and New Jersey, Ramapo, Mahwah, Orange, Rockland County area and the further south in that, kind of the heart of their range.

DR. KLEMENS: Okay. Now bulletin 112, which is administratively noticed in this proceeding, talks about what happens to slimy salamanders and their habitat specialization when one gets to the areas you're speaking of.

Basically you're talking west of the Hudson River. It's really, as I understand it -- and maybe we should have you ask the question, but they're much more widespread and generalized there?

THE WITNESS (Butler): Correct.

DR. KLEMENS: So we're dealing in fact with a species that is not rare throughout most of its range, but is potentially of range edge here in Western Connecticut?

THE WITNESS (Butler): That's accurate, yes.

DR. KLEMENS: Can you provide the dates and details of the areas searched for slimy

salamanders on the site? And certainly you can provide that at the continuation if you wish.

THE WITNESS (Butler): Yes, I can give you a synopsis verbally without pointing to diagrams. We searched on the 12th, I believe, of September, searched a broad area including the northern, the whole northern portion of the site, which is -- much of which is a portion beyond the array. That's the most steeply sloped and mature forested habitat on the site.

We turned, that day, 400 plus cover objects, you know, with standard methodologies looking for whatever lies beneath. We did find a number of other amphibians, amphibian species that were to be expected. We didn't find tremendous snake diversity there. We found lower than expected snake observations.

And the area adjacent to the cryptic wetland, the cryptic vernal pool you just mentioned south to the stream outlet where it drops steeply off toward the reservoir there, we worked that entire area quite heavily. Some of the objects that we encountered today I saw that we -- had already been turned by us previously.

And to the west there's a bluff near the

property line on the northwest site that we also counted -- observed.

DR. KLEMENS: When you talk about the 400 cover objects -- and I know this may be parsing things a bit and you may want to go back to your notes -- how many of those were small logs?

How many of those were big, and logs broken apart, and how many of those were embedded talus, like the rock we lifted up at the wetland?

THE WITNESS (Butler): I didn't -- I didn't discriminate on those parameters. Any object that was -- if it had a suitable -- if an object was, upon being lifted up and it was void and, you know, air space underneath and there was no -- no chamber there, I wouldn't -- wouldn't include that as a possibility.

But downed logs, there's a number of downed logs there from either prior forestry activities or just people cutting logs to clear the trails. So we rolled many logs. We split some of the logs that were in piles there, you know, all that kind of standard methodology, but I didn't account for the dimensions of the cover objects we turned, yes, specifically.

DR. KLEMENS: I think I've already asked you to comment on the value of the interconnects to the lease area's talus slopes and cliffs to support slimy salamanders, but what would the clearing of the interconnected leaks area do to slimy salamanders living in that portion of the site?

THE WITNESS (Butler): If they're present there, which we haven't -- I fully expected given that kind of a landscape that we would be -- find some representation. I didn't expect a large showing of specimens, but I expected with a level of effort -- and the conditions are not particularly dry conditions.

We went in there with the expectation of finding them. And we were, you know, and myself and Scott Smyers who did the work with me, when they're targeted on the survey like that you're somewhat disappointed when you don't find the charge, find the target.

In that area, if they're present -- and the same thing. We did work that slope. I didn't finish my assessment. On the second foray out there we worked that area and proceeded down to the reservoir outlet, up in that.

So we spent quite a bit of time in there covering -- turning cover objects without any successful determinations. I think I found a single red back salamander in that area on last Friday, it was.

So to answer your question, though, is -- if you open up the canopy there, there will be impacts on the microhabitat at the ground level within and beyond the corridor. I don't think it's going to be an exponential spread of influence that is -- is felt, let's say, in the underground or the near ground community, but there will be alteration to the microclimate within the corridor or in the chase, which I think is what you're asking.

DR. KLEMENS: And you have alluded to the fact, and I agree with you, that the dryness of this particular end of summer is not the optimal time to detect slimy salamanders.

THE WITNESS (Butler): No, but I was surprised that even at higher elevations, which many of the stones that we turned were, you know, in or embedded around moist sphagnum moss. So the active ground conditions weren't parched.

If we turned a cover object and it's a

parched environment underneath, you know there's no -- virtually no likelihood of finding a slimy salamander or most of the other salamander species, but I wouldn't say it was anything on par with the 2016 summer conditions, at which time I think it would have been futile to look.

DR. KLEMENS: When is the optimal time for capturing the slimy salamanders in Connecticut?

THE WITNESS (Butler): Optimal is probably the May to June period, but there's certainly records, as you'd be aware of, into October of captures, and including a number of records in September.

DR. KLEMENS: So in bulletin 112, which is administratively noticed as item number 60, I'm going to read you one very quick thing and I'm going to ask you to comment on the impacts of this.

In New Fairfield's Pootatuck State Forest a small patch of mature forest was located in a steep rocky duff covered slope. This mature forest has not been logged for some time, possibly due to rocky terrain. It was surrounded by much younger forest and a very thin duff layer.

A nearby clear-cut area was in the process of reforestation primarily from saplings. Although plethodontids Was readily collected in the patch of mature forests, intensive searching of both the young forest and clear cut did not yield any specimens, although both plethodontidae and notophthalmus viridescens were found.

So reflecting upon what I had just read, can you explain how you would mitigate forest clearing of slimy salamander habitat as discussed in page 9 of the prefiled testimony?

THE WITNESS (Butler): And as you might imagine, I've recently reread that, that passage as well. So it's not a surprise, but I just want to check page 9.

I believe what I heard over there is -- our suspicion would be, or my suspicion would be that the species is more affiliated with the more rocky slope areas. The majority of it, if you want to cut it into two categories of steep, rocky, talus forest and more mesic forest, the majority of the array is proposed for the more level ground, as you might expect just for logistic purposes and solar exposure.

So the impacts clearly to a mature

forest is going to diminish salamander habitat, the slimy salamander habitat as well as red back, at least in the acute phase.

So your question, the presumption is the higher value habitats, at least from what I understand of the site now after two visits and a number of -- scrutiny of GIS materials and other investigations, the higher value habitat is going to be on the periphery of the site and the northerly portion of this site simply due to the aspect and the maturity of the forest and the underlying substrate.

They're not necessarily excluded from a means of forest, and as we've said elsewhere, through the range that's more where you're trying -- you -- they don't have such rigid, seemingly rigid habitat requirements. But all the evidence that I've gathered and that you've reported on seems to indicate that they, in this extreme edge of the range, they are bound with the more, which I am assuming, bound with the more steep sloped habitat, which I assume has to do with the land-use history.

The species probably is not very good at recolonizing the property that's been deforested,

or otherwise manipulated because they aren't a wide-ranging species, animals, individuals.

So the assumption is here -- is we don't yet know -- at least I didn't know at that time if we actually had slimy salamander here. It was speculative. It was not directly mapped. The information from NDDB, or DEEP was that this has been marked as potential habitat based on the Route 7 mitigation field study, or landscape study.

So we didn't observe the animals. We had no empirical evidence that they're present. And the presumption on my part would be if they are present in some minor occurrences on the site, it would be in the more heavily soaked habitat.

DR. KLEMENS: So it would be possible for this site to actually create some sort of map of where you think the prime slimy salamander habitat might be based on these parameters?

THE WITNESS (Butler): Yes, and we're working on a rational analysis based on a specific objective.

DR. KLEMENS: And then that leads to my next question. If you located slimy salamanders, or what you feel to be slimy salamanders habitat,

how large a buffer zone would you need to place around it to protect the integrity of that habitat from dessication, sunlight, invasive plants and other impacts?

So let's say for argument's sake you create the map. You have some matrix. You say, these are areas we have determined to be, based on the literature and field surveys, slimy salamander habitat. You could then map these and then you could draw a buffer around them. And how big or how large would that buffer be?

THE WITNESS (Butler): So how big should that buffer -- to have as immeasurable as, you know, impact? Is that --

DR. KLEMENS: Well, minimize the impact to the maximum extent practicable within the operations of this project.

THE WITNESS (Butler): I would pull a number -- and I haven't dwelled on this, but a hundred-foot part where you have an attached forest would certainly be a significant buffer. And that's just a, kind of a default number that's used, you know, in many applications.

That would not be an absolution or any offsite influence. As you get into a hundred feet

of forest you're at least starting -- you're getting the microclimate conditions of the forest denuded from the exterior, but not completely ablated, if you will.

Ideally it would be, you know, infinite or it would be extremely large for -- a fairly highly precautionary measure, but in the interest of reality, a realistic buffer is somewhere in the hundred-foot range.

DR. KLEMENS: And I'm getting to the last questions. What is the effect of populations -- and you've sort of touched on this -- of the species in fragmented versus core forest habitat at its northeastern range limit?

THE WITNESS (Butler): What is the --

DR. KLEMENS: The effect of fragmentation of forest. Can one anticipate that forest fragmentation is a bigger problem for this species and its range limit than, let's say, would be in the site you spoke of west of the Hudson River?

THE WITNESS (Butler): Yes, most of the recent occurrences are in relatively intact forested environments that I'm aware of, and you're certainly aware of more than I am.

DR. KLEMENS: I can't testify.

THE WITNESS (Butler): So yes, must -- most of the current occurrences in Southwestern Connecticut are in large areas that are core forest.

DR. KLEMENS: And could you comment on the likelihood of slimy salamanders? You touched on this earlier, but I want to go back to it. Would you be able to repopulate the site after the decommissioning of this project?

THE WITNESS (Butler): I don't know empirically, as I said. But given the species' biology and the home range data that I am aware of, is not a big mover. Unlike the salamanders that are prone to, you know, seasonal migrations and so forth, these animals do their entire lifecycle in a finite niche.

So unless the population pressure is so great that they need to burgeon outward, I think they're slow to -- and I think that's why their range is apparently limited to the two counties in Connecticut. If they were more capable to disperse, there's certainly more habitat out there than there are occurrences.

DR. KLEMENS: And I think that that is

an accurate statement which leads me to my final question that, how can one effectively consider protection of these threatened species when you have as of yet not been able to locate them on site despite the fact they've been recently documented in forested portions of Candlewood Mountain? And we likely encountered a small one today that escaped in the duff layer.

How can we create a plan for this site that adequately protects this threatened species?

THE WITNESS (Butler): The current plan, as I said, the current plan avoids most of the old growth -- not old growth, but heavily mature growth talus forest. So that's -- that's the main component of our minimization strategy for impacting the species, assuming it's present.

And it's seemingly -- based on discussions earlier, it seems like the species may in fact be empirically present, not just speculatively present on the site.

In fact, the steeper sloped mature forests are being largely avoided with the exception of the interconnect, which I think is a finite passage through maybe a 40 or 50-acre geological formation there. That's -- that's

essentially our avoidance, is that the primary habitat is not being affected directly with a direct impact. Just there will be buffer zone spillover, but most of the habitat is not talus forest.

DR. KLEMENS: Next I have a couple of requests. And I think the Chairman said part of the reason to get these questions out now was to give you a chance to respond.

My first request to you would be, can you map the cryptic vernal pool, what you call the lollipop, the depression section that we visited? Can you map that?

THE WITNESS (Butler): Yes, sir.

DR. KLEMENS: And could you do the Calhoun/Klemens analysis of the impacts of that so we have some figures to work with, mindful that we look at the depression as one impact?

The envelope is the next sphere of impact, and the 100 to 750 feet, the critical pressure, that would be very helpful to understand what the level of impact is and the extent of that vernal pool.

THE WITNESS (Butler): That can be pretty readily mapped and confirmed, or it could

be defined.

DR. KLEMENS: Thank you. And could you also submit for the record -- because I didn't have any photographic medium with me. Could you please submit for the record the photographs of the marbled salamander and four-toed salamander that you took today, please?

THE WITNESS (Butler): Yes, we have those.

DR. KLEMENS: And we're going to try to make some attempt at creating a slimy salamander habitat map of the site of where you think the prime habitat is.

THE WITNESS (Butler): Yes.

DR. KLEMENS: And with an appropriate buffering, and lay that onto the development plan so we can assess the impacts of this forested clearing, forest clearing and development on this species. Those were my sort of three tasks I would like.

And that concludes my questions, and I thank you all for your patience.

THE CHAIRMAN: Thank you, Dr. Klemens.

Mr. Harder.

MR. HARDER: Yes. Thank you, Mr.

Chairman.

I had one question to follow up to Dr. Klemens' earlier question that Mr. Walker responded to. You had said -- I think that you had entered into some contracts that prevent you from doing more lengthy investigation, I guess, on some of the wildlife issues that Dr. Klemens mentioned.

When were those contracts finalized?

THE WITNESS (Walker): It was in late spring of this year. We entered into the -- we signed those agreements ourselves. I'll have to double check the time, but I think it's February. And then it's up to the utilities.

We're negotiating with the other parties unrelated to us. They had agreements that they were signing, and they held up signing our agreements until they finalized all their other negotiations. They had completed the negotiations with us, and when they completed all the negotiations with, not only us which they had concluded -- I'll have to get you the exact time, the timeframe.

Then they signed all the agreements, but we were done in that around the February

timeframe.

MR. HARDER: And they specifically required you to complete the project and start generating power in a timeframe that would prevent you from doing the more extensive studies that Dr. Klemens mentioned earlier?

THE WITNESS (Walker): We -- we have to -- correct me if I'm wrong. We have to have the construction done between the spring to fall, trying to get into 2018, sometime in 2018?

MR. HARDER: I'm sorry. I didn't hear that?

THE WITNESS (Walker): By the end of 2018.

MR. HARDER: Completion of construction?

THE WITNESS (Walker): Completion of construction. We can give you a full schedule, which I don't have off the top of my head, but we could submit that.

MR. HARDER: I had a few questions that relate to the environmental assessment, and a couple that relate to the storm water management plan.

First of all -- and some of this is informed, I guess -- or was informed a little bit

by the discussions or comments during our tour today. The first one concerns the presence of bedrock.

One place in the environmental assessment it says, shallow to bedrock -- is there, another phrase, another place. And the environmental assessment says, bedrock is not anticipated.

Based on comments I heard earlier today during the tour, I assume that the not-anticipated phrase somehow is not appropriate. I'm assuming, and also just observing the site, but in some areas bedrock will be present at shallow enough depths that you will have to deal with it. On page 1 it said, not anticipated. Page 16, the phrase "shallow to bedrock" is used.

THE WITNESS (Bukowski): Yeah. Looking back at the EA, the phrase that we wrote was, bedrock is not anticipated to be encountered given the minimal subsurface disturbance required. And -- however, if bedrock is required it will be drilled to accommodate the proposed facility.

So as we mentioned before there will be grounds crews that, you know, do have to penetrate into the bedrock that we saw there, but I think

what this is really saying is there's not going to be a lot of earthwork or you know, substantial amount of deep trenching that would, you know, require substantial bedrock.

THE CHAIRMAN: Mr. Lynch?

MR. LYNCH: I have a followup to the previous question, but I have one here, too. If you discover bedrock, did I hear you say it will be drilled and not blasted?

THE WITNESS (Bukowski): Correct.

MR. LYNCH: I'll get back to the others later.

MR. HARDER: There's terms used in, I guess through the whole petition that concerns me a little bit, terms like commitments or make statements to do certain things if required or if practicable, especially the "if practicable" term I guess makes me a little nervous.

The first example I'll refer to is page 18 of the environmental assessment concerns application of pesticides or herbicides, where you talk about the application of pesticides and herbicides is required.

And I guess my question is, is there anything that would prevent you from committing to

not using pesticides or herbicides at all? And if you can't commit to that, what are those situations where you feel it would be required?

THE WITNESS (Lindsay): We don't typically use pesticides or herbicides. I would say -- and Mr. Walker can correct me if I'm wrong. We do not have any intention of using them in the operation of the project.

MR. LYNCH: Mr. Lindsay, could you please speak up?

THE WITNESS (Lindsay): We have no intention of using that. I don't see any reason why we would do that.

MR. HARDER: Okay. So you could perhaps adjust that part of the petition?

THE WITNESS (Lindsay): We should clarify that then we have no intention of using them and we don't -- have never used them.

MR. HARDER: Thank you.

I guess the only -- I might have a couple questions in this area, but concerning the wetlands separating distances. I'm concerned especially in areas where there are some steep slopes that you're going to be, at a minimum, removing trees in areas fairly close to steep

slopes, very close, fairly close to the wetland areas.

And I'm wondering, what's your basis for the separating distances you've chosen? I'm sure you're aware of the Town of New Milford's wetland rules require/establish a separating distance of a minimum of a hundred feet, at least in terms of establishing an upland review area. Other towns in Connecticut have -- actually have a larger separating distance.

So I'm wondering just generally if you can tell us what your thinking was there and why you have certain areas, why you have activity in certain areas including the clearing of trees and other things. I'm especially concerned in areas where there's drainages swales, upgrading of wetland areas.

And then one other specific point, and this is actually in the storm water management plan, sheet 9 of 14 shows the connecting -- the route of the connecting cables or wires. It almost looks like somebody tried to follow the route of the wetlands.

The wetlands kind of exist in almost a zigzag pattern and it almost looks like somebody

attempted to deliberately follow the route of the wetlands. I'm sure that wasn't the case, but it does in that one section, anyway. It follows the route of the wetlands fairly closely.

So I'm wondering what alternatives you looked at, especially for a situation like that more generally. You know, what alternatives do you look at, did you look at when looking at the separating distances and establishing, you know, an upland review area?

So if you could answer that?

THE WITNESS (Chan): Well, I can state with respect to the interconnect route the alignment of the route actually was reconfigured to minimize the crossings of wetlands and also to maximize following existing cleared corridors.

There's a road that runs along there. There's an existing fiber-optic line, and we're following those corridors to the maximum extent that we can on the interconnect route. And -- and also avoiding the wetlands, the direct impacts to the wetlands wherever possible on the interconnect corridor.

So it was actually redesigned to avoid direct impacts to the wetlands, but those, we had

existing road and that existing fiber-optic corridor are there. And so we wanted to follow that rather than creating yet another cleared corridor through that area.

With respect to the site design I'm going to ask Rob to address that, other than it was an overriding goal to avoid any direct impacts to the wetlands on the site.

THE WITNESS (Bukowski): So what we tried to do with the site design and the array design is making it as compact as possible to try to, you know, keep it as far away as we could from the wetlands areas given the size of the array.

MR. HARDER: I guess that kind of gets to my next question. Is it fair to assume that the main factor, maybe the only factor in deciding how far or how close the arrays and other activities could come to the wetland areas was the amount of power that you would generate?

In other words, the further away that the system is from the wetland, the less power you generate?

THE WITNESS (Lindsay): In general, I mean, yes, we have a certain minimum size of system that we have to build and so that's a

factor in terms of trying to fit that within an envelope that has the most -- that minimizes the impact on any adjacent areas. So --

MR. HARDER: Did you conclude that in your evaluation of the site is there a size of a system that you -- a minimum size of the system that you would need to construct to make it a viable project?

THE WITNESS (Lindsay): There's a minimum AC size that we need to have in order to comply with our contractual requirements.

MR. HARDER: What is that size?

THE WITNESS (Lindsay): That's 20 megawatts.

MR. HARDER: So the system you're proposing is the minimum?

THE WITNESS (Lindsay): That's correct.

MR. HARDER: A couple other questions on the storm water management plan. They kind of alluded to these. You referred to steep slopes. You talk about steep slopes and other issues related to steep slopes.

Do you have a definition or a cutoff for what a steep slope is, and does that affect, you know, if you encounter a steep slope in a certain

area, does that tell, you know, we can't do this or we can't do that?

THE WITNESS (Bukowski): The racking that Ameresco is proposing to use has a maximum tolerance of ten degrees per slope.

MR. HARDER: Okay. So there will be no arrays in the areas greater than a ten-degree slope?

THE WITNESS (Bukowski): Correct. There there's very minimal grading proposed, so there are some localized steep spots that will need to be leveled out a little bit. But other than that, you know, they're staying -- keeping it away from the slopes that are ten degrees or greater.

There is a portion on the northern end where it slopes to the south that I believe the racking can go a little bit more than ten degrees, but for the most part ten degrees is the criteria.

MR. HARDER: That just adds to my confusion, I guess, a little bit there. And perhaps some of these notes or some of the points I'm referring to here are out of context a little bit.

But in the storm water management plan, page 2, I think there's a comment that said -- it

talks about grading and regrading, and a range of slopes in the order of 3 to 25 percent would be retained.

So I guess maybe I should expand my question, not just for those areas where you're proposing to install the arrays, but just in general where you'll be clearing trees, doing any work.

Are any of those steeper sloped areas up to 25 percent? There was also a comment made that erosion control blankets will be used for slopes greater than or equal to 33 percent. So I guess my question is, what activities do you see occurring in those really steep areas?

THE WITNESS (Bukowski): So I think in the steep parts, and I'd have look back at the plans, but it would just be tree clearing.

MR. HARDER: Back to the term I mentioned earlier about doing things if practicable. I think on page 2, again also there was a comment about stockpiles will be avoided on steep slopes if practicable. I think it was stockpiles near the roads and I can understand, I guess, a little bit more so, but you know, it might be impracticable to avoid a steeper area

with a road because you have to get from here to there.

But for stockpiles I would think that if it's a steep area it presents problems, you know, increased concerns about erosion. Don't put the stockpile there. You know, put it somewhere else. So you know, again I'm concerned.

I mean, sitting here now we could all agree, well, maybe that's, you know, it's not practicable to put it there, but when you transition to the field, and schedules are getting tight and people are trying to work fast and regulators aren't around, practicable might mean something different.

So for something like stockpiles why would you think that it would not be practicable somewhere else?

THE WITNESS (Bukowski): I think that statement is really towards the end of construction. So you know, based on the size of the array the, plan is to use the footprint within the array for staging and stockpiling as necessary.

But as we work out and space gets more limited we may be looking for other places to put

stockpiles, but I agree. Stockpiles on steep slopes is really not practical.

MR. HARDER: There were, I think, some conflicting notes on the width of the access road and maybe it was because it's wider in certain areas. But one place of notation, it mentioned that it was 16 feet. Another one mentioned twelve feet. Is it varied in width, or who's gone wrong?

THE WITNESS (Bukowski): It varies somewhat to accommodate the -- the turning radius that we looked at, but we're -- we're still in the process of finalizing those plans. So that will be clarified in the -- in the final submittal.

MR. HARDER: Okay. Thank you. That's all I have. Thank you.

THE CHAIRMAN: Okay. Thank you.

Mr. Hannon.

MR. HANNON: Thank you, Mr. Chairman.

Just to follow up on a question that was raised earlier about pesticides. With the clearing that is being proposed on site, what kind of plan do you have to manage invasive species? And would any type of pesticides or herbicides need to be used to control invasive species?

THE WITNESS (Walker): We know that the

grass gets mowed periodically, maybe once a season or twice a season, and that, that's how we manage it. We don't use herbicides or pesticides.

MR. HANNON: That's the area in between the panels. Correct? I mean you've got some perimeter areas, too, that are being cleared because of shading issues. So I'm just trying to make sure I understand how the whole site is being handled.

THE WITNESS (Walker): We -- we look to Amec to tell us exactly how to do it, but I don't envision herbicides or pesticides in use. There will be a mechanical -- it will be a mechanical clearing.

MR. HANNON: Well, part of the reason I'm asking is, for example, Eversource has a program where they will go out. They will trim trees, but they will actually apply certain things. It may be painted onto the stump that's left to try to help kill it.

So I'm just trying to make sure that we're all talking about the same thing here.

THE WITNESS (Walker): I don't envision it, unless Amec envisions it.

MR. HANNON: Just some general

questions. I think I calculated it, but based on the 30-foot width of the transmission line, it's roughly about 64, 65 hundred linear feet that's being cleared? And just trying to work back from the 4 point -- was it 3 acres of cleared area, 30-foot wide, you know?

THE WITNESS (Lindsay): It's not that amount of clearing. There, there's considerable -- and we would have to refer back to get exact numbers, but in terms of linear feet, that's more the total linear feet of the interconnection run.

A good portion of the interconnection run is along the existing access road when you're on the 1st Light property. So it's -- it's -- there may be -- and we would -- would do this in conjunction with 1st Light also, but there might be a little bit of trimming along one side along the road, but it wouldn't be -- it wouldn't be clearing in any significant amount along the whole length of the -- of the access road.

And also it turns off of the access road and goes along an existing cleared area for a fiber-optic line. So we're going to go along the same area. Obviously we have to coordinate to

make sure that we don't interfere with the fiber-optic line. But that is what we've got arranged with 1st Light.

So that area, again has already been cleared. There may be some -- there may be some -- some trimming that would go on in that area, but not clearing.

MR. HANNON: The reason I'm asking is because on page 26 of the application it specifically states, the total estimated tree clearing for the interconnection route is 4.3 acres.

Well, if you're 30 feet wide, and you crunch the numbers and it looks at though it's about 6200 feet. You telling me that it's not because there's the other area. So is it less than the 4.3 acres that's being cleared for the transmission line?

THE WITNESS (Lindsay): I -- I should check. And I should -- maybe I'll defer to Pam. Maybe I'm incorrectly stating it.

THE WITNESS (Chan): I believe that the 4.3 acres came from looking at what we expected to be clearing along that entire corridor, not recognizing that there were always -- already

portions of that corridor that were cleared for the road.

But I -- I would have to go back and double check exactly how that number was calculated. I believe it accounted for the fact that a portion of the corridor is already cleared, but I -- I would like to verify it.

MR. HANNON: That would be appreciated.

I guess another question is, I believe the poles that are being proposed are about 30 feet high. I mean, I could be off on that, but the reason I'm asking about the height of the poles is because if the width of the clearing is 30 feet, but yet the trees that are there are, as you mentioned earlier, are 60 to 70 feet, are you concerned about trees coming down and taking out the power lines to the substation?

THE WITNESS (Lindsay): There is some risk of that, but that's a typical amount that would be cleared and, you know, we would need to provide the necessary maintenance and repairs if that were to happen.

MR. HANNON: I want to ask you a little bit about the internal roadway that's proposed. I believe it's like twelve inches of gravel that

you're proposing for the internal roadway.

I guess my question is, typically because what I've seen over the years is you have a gently sloping hill and you cut a road or you cut a trench in, sort of perpendicular to that slope. That's now created sort of a new pathway for water.

So my question is, has anybody looked at if you're putting in this road network, is that going to intercept any water and either take it away from the wetlands, or might it add to it?

THE WITNESS (Bukowski): Is this for the access road that goes up from Candlewood Mountain Road?

MR. HANNON: This is for the internal roadway for the entire area.

THE WITNESS (Bukowski): We're still finalizing that. What we sometimes do is put in cross culverts underneath the road so that ponding doesn't happen above it.

But yeah, we're still --

MR. HANNON: I'm not saying ponding, but I'm just talking about the change in direction of flow, because if you have wetlands that have been established for a while my understanding is some

of the forest area out there, you go back what? Sixty, 70 years it's been growing.

So you've got a certain topography that's out there at that point in time. Should you change that topography by putting in a road network? Even though it's only 12 inches deep with gravel, that is going to change the direction of the flow of some of the groundwater. So as a result has anybody looked at what may happen with where the water is currently going on the site and how that may be transferred into the --

THE REPORTER: I can't hear you.

MR. HANNON: Sorry. I'm trying to find out whether or not the roadway that is being proposed might change the direction of where some of the current water flows are.

THE WITNESS (Bukowski): Yeah. I'll have to look back at the final grading plans to confirm, but in general we're trying to keep the topography of the site the same. So if a twelve-inch thick road is required then, you know, the idea would be to excavate twelve inches of material out and put the road in.

MR. HANNON: On page, I guess it's page 24 -- just a question. You talk about creating

over 250 construction jobs and over 30 operation jobs. What operation jobs?

THE WITNESS (Lindsay): You mean -- hold on.

MR. HANNON: Because I didn't think anybody was going to be on site, but just what I need clarification on.

THE WITNESS (Lindsay): What we did is we used the JEDI model, as we stated there. And that basically you put in the project parameters, the project size and it provides this, this output.

The -- in this case it's likely that the operation jobs won't be that amount. It will be -- operation is really fairly minimal, the needs of that, but there are needs to monitor the system even remotely. So there are a number of jobs, probably more like ten or less of people that are involved in monitoring a number of these systems.

So that there's, you know, there's also jobs related to the mowing and -- and the maintenance during, you know, during the growing season.

MR. HANNON: I mean, would surveyors

fall into that category, too?

THE WITNESS (Lindsay): Yes. There's a number of different categories. And the JEDI model is fairly generalized. So it's not necessarily always entirely, I mean, we provide it as a guideline, but it's, you know, the operation jobs for solar tend to be a little bit on the lesser side.

THE CHAIRMAN: We have a couple of followups. Dr. Klemens has one, and then Mr. Lynch.

DR. KLEMENS: Thank you, Mr. Chairman.

This gets me thinking probably another piece of information that I would like to request is that we have pre and post-construction water budgets for the two vernal pools. That would be wetlands one and wetlands five.

Thank you.

MR. LYNCH: With regard to the construction jobs, does Ameresco have a construction company or a construction company on call? Or will you put out an RFP?

THE WITNESS (Lindsay): We are not a construction company per se. We manage our project entirely and we would be putting out RFPs

for the work.

MR. LYNCH: So within the RFP some of Dr. Klemens' concerns and other panel members' concerns could be outlined in that RFP?

THE WITNESS (Lindsay): Yes, potentially.

MR. LYNCH: Thank you.

MR. HANNON: Okay. On page 25 I just want to get a clarification. You talk about area emissions and water consumption discharge. It's the statement, no water discharges of any kind during it's operational lifetime.

So I'm assuming -- well, actually I don't know what I'm assuming on that because it seems as though there is storm water that's going offsite. So what's your definition of water discharge?

THE WITNESS (Chan): We were speaking to wastewater discharges such as washing wastes, sanitary wastes. The storm water discharges are going to be consistent with what they are now.

MR. HANNON: Okay. That kind of goes with what my initial inclination was, but I just wanted to make sure that you were not referring to storm water with any type of wastewater discharges

because you don't say wastewater discharges.

THE WITNESS (Chan): I apologize for the lack of clarity.

MR. HANNON: And again, just so I think I understand. The way the land is currently set up there is a company that owns it. You are leasing it from them. At the end of the solar project that lease would expire and the current landowner would maintain ownership. Correct?

THE WITNESS (Walker): Of the land.

MR. HANNON: Correct. Okay. No, I just wanted to make sure, because there were some issues about, you know, comments that have come in about placing easements on it and things of that nature. I just wanted to make sure I understood that part of it.

Some of the questions that I had have been asked and answered. So I do have a question in a little bit more detail about the drilling that's being proposed as far as installing the posts. We've had a number of situations where people are coming in -- it's sort of a piledriver that puts the post in. We've had others where there's concrete, like on landfills, things of that nature. I'm not that familiar with this type

of material. And I think you also talked about a diamond tip drill and things like that.

So can you explain in a little bit more detail what this involves? Because my understanding is you're saying that the bedrock does not create a problem here. And you may also predrill some of these holes to make it easier to just drop the poles in. And I'm assuming then you backfill with some concrete?

THE WITNESS (Bukowski): So the way this system works is if they predrill the holes they drill, say, an inch and a half or so diameter hole. And then behind that they come in with a ground screw, and the plate on the ground screw is larger than the hole that they predrill. So it's really two holes. It's predrilling and then advancing the ground screw in.

MR. HANNON: Just a couple more. This is getting into some of the erosion sedimentation control measures. You talk about, you know, once you've got the final grading installed, and seeding.

Is that hydroseeding, or how did you do that?

THE WITNESS (Bukowski): Most likely. I

mean, that's to be determined. You know, Ameresco lines up their contractor. We can certainly work with them, but typically it's done with hydroseeding.

MR. HANNON: And just to make sure, I believe the way that you have laid out the phasing plan for the well is that there's subareas that are set up that are to be, I believe, 4.9 acres trying to keep everything in the 5 acres.

It talks about getting 80 percent stabilization of that upper area before you move into a lower area, but I guess given the time of year that some of this work may be done if it's done during the winter, how would you accomplish that?

THE WITNESS (Bukowski): So for that we would end up having to use some kind of temporary stabilization measures to, say, spray mulch or matting or something like that, something other than seed.

MR. HANNON: And the goal is to start from the higher elevation to the lower. Now could you be working different phases at different times? Because I mean, there are different elevations you could be starting just a little bit

higher than what's in that full drainage area, but I don't know if you'd be working on multiple subareas at one time.

THE WITNESS (Bukowski): Really the way the phasing plan was set up was to add, like you said, less than five acres draining to one common drainage point. So some of the different areas, that may drain into a different one.

I mean, it's feasible to be working on two of those at once, but in general the idea is to work, you know, from the top down, but ultimately they will have to be worked on with the contractors. Some of those are related to means and methods.

MR. HANNON: I mean, it might take a little bit of effort, but I don't think it's going to be too much, but if you could possibly go back and take a look at how you may be able, or if you're able to go in and work different parts of this site at the same time so there's a better understanding as to what the phasing might be in the different drainage areas?

I think that does it for me.

THE CHAIRMAN: The Council will now recess until 6:30 p.m., at which time we'll resume

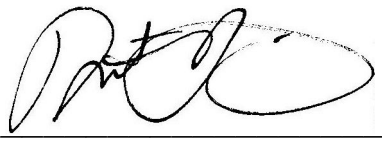
with the public comment session.

Thank you.

(Whereupon, the above proceedings were concluded at 4:57 p.m.)

CERTIFICATE

I hereby certify that the foregoing 99 pages are a complete and accurate computer-aided transcription of my original verbatim notes taken of the Regular Hearing in Re: PETITION NO. 1312, CANDLEWOOD SOLAR, LLC, PETITION FOR A DECLARATORY RULING THAT NO CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED IS REQUIRED FOR THE PROPOSED CONSTRUCTION, MAINTENANCE AND OPERATION OF A 20 MEGAWATT AC (26.5 MEGAWATT DC) SOLAR PHOTOVOLTAIC ELECTRIC GENERATING FACILITY LOCATED ON A 163 ACRE PARCEL AT 197 CANDLEWOOD MOUNTAIN ROAD AND ASSOCIATED ELECTRICAL INTERCONNECTION TO EVERSOURCE ENERGY'S ROCKY RIVER SUBSTATION ON KENT ROAD IN NEW MILFORD, CONNECTICUT, which was held before ROBIN STEIN, Chairman, at the E. Paul Martin Room, Roger Sherman Town Hall, 10 Main Street, New Milford, Connecticut, September 26, 2017.



Robert G. Dixon, CVR-M 857
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My Commission Expires: 6/30/2020

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