1		STATE OF NEW HAMPSHIRE
2		PUBLIC UTILITIES COMMISSION
3	Annil 11 20	<b>23</b> - 9:01 a.m.  * <i>REDACTED</i> *
4	21 South Fru Suite 10	
5	Concord, NH	
6	DF.	DE 22-073
7	KE.	UNITIL ENERGY SYSTEMS, INC.: Petition for Approval of Investment
8		in and Rate Recovery of a Distributed Energy Resource Pursuant to RSA 374-G.
9		Energy Resource Fursuant to RSA 374 G.
10	PRESENT:	Chairman Daniel C. Goldner, Presiding Commissioner Pradip K. Chattopadhyay
11		Commissioner Carleton B. Simpson
12		Alexander Speidel, Esq./PUC Legal Advisor
13		Doreen Borden, Clerk
14	APPEARANCES:	Reptg. Unitil Energy Systems, Inc.: Matthew C. Campbell, Esq.
15		Patrick H. Taylor, Esq.
16		Reptg. Clean Energy New Hampshire: Christopher Skoglund
17		Reptg. Residential Ratepayers:
18		Michael Crouse, Esq. Office of Consumer Advocate
19		Reptg. New Hampshire Dept. of Energy:
20		Matthew C. Young, Esq. Alexandra K. Ladwig, Esq.
21		Elizabeth Nixon, Dir./Electric Group Mark Toscano, Electric Group
22		(Regulatory Support Division)
23	Court Rep	oorter: Steven E. Patnaude, LCR No. 52
24		[REDACTED - For PUBLIC Use]

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10	3	Corrected Bates Page 000060 of Jacob S. Dusling Testimony	premarked
11	4	Joint Supplemental Testimony	nremarked
12	•	of Kevin E. Sprague, Jacob S. Dusling, Andre J. Francoeur,	premarked
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14		with attachments {CONFIDENTIAL & PROPRIETARY}	
15	5	Joint Supplemental Testimony	nremarked
16	9	of Kevin E. Sprague, Jacob S. Dusling, Andre J. Francoeur,	premarked
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1			
2		E X H I B I T S (continued)	
3	EXHIBIT NO.	DESCRIPTION	PAGE NO.
4	8	Joint Letter Supporting the Petition	premarked
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6		on Indirect Benefits	-
7			
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### PROCEEDING

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I'm Commissioner Goldner. I'm joined today by
Commissioners Simpson and Chattopadhyay. We're
here today for a hearing in Docket 22-073
regarding Unitil Energy Systems' proposal to
build a solar power installation in Kingston,
pursuant to the authority in RSA 374-G. An Order
of Notice was issued by the Commission regarding
this matter on December 21st, 2022, which notes
that the Commission must render a decision for
the first phase of this matter by May 1st, 2023.

This first phase is established at the request of the Company along the lines of what was approved in Docket Number DE 09-137, and as stated by the Commission in its Order of Notice, would be for the determination of whether the Kingston Project is in the public interest under the statutory criteria of RSA Chapter 374-G.

We note that the Company filed two supplemental testimonial presentations on February 1st, 2023 and February 27th, 2023; did an updated supplemental report on indirect benefits on March 31st, 2023; together with the

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1
         joint letter supporting the Petition signed by
 2.
         the representatives of all parties to this docket
 3
         on March 23rd, 2023.
 4
                   At this time, we'll take appearances,
 5
         beginning with the Company.
 6
                   MR. CAMPBELL: Good morning,
 7
         Commissioners. Matt Campbell, on behalf of
 8
         Unitil Energy Systems, Incorporated. And I'm
 9
         also joined today by Attorney Patrick Taylor,
10
         Chief Regulatory Counsel for the Company.
11
                   CHAIRMAN GOLDNER:
                                       Thank you. Clean
12
         Energy New Hampshire?
1.3
                   MR. SKOGLUND: Chris Skoglund, Director
14
         of Energy Transition, with Clean Energy New
15
         Hampshire.
16
                   CHAIRMAN GOLDNER: Very good.
17
         Office of the Consumer Advocate?
18
                   MR. CROUSE: Good afternoon [sic].
19
         name is Michael Crouse. Unfortunately, while Don
20
         is in Barcelona, you are all stuck with me today.
2.1
                    CHAIRMAN GOLDNER: Excellent,
2.2
         Mr. Crouse. Welcome. And the New Hampshire
23
         Department of Energy?
24
                   MR. YOUNG:
                                Good morning,
```

Commissioners. Matthew Young, on behalf of the Department of Energy. And with me today is Alexandra Ladwig, who is the co-counsel in this matter; as well as Liz Nixon, who is the Electric Director at the Department of Energy; and Mark Toscano, who is a Utility Analyst working on this docket.

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CHAIRMAN GOLDNER: Very good. Okay.

Unitil filed a motion -- is there

anyone else here today, just checking? I don't
think so.

[No indication given.]

a Motion for Confidential Treatment regarding certain data filed during the pendency of this proceeding. No indication of the other parties' positions regarding this motion were provided by -- by Unitil, and the ten-day objection period has not run yet. So, we'll take this motion under advisement, and issue a ruling regarding the Company's motion within the final order on this phase of the matter, expected by or on May 1st, 2023.

As an initial matter, we'll ask that

1 the non-utility parties give -- provide their 2. position regarding the Company's Motion for 3 Confidential Treatment. During this hearing --4 I'm sorry, I've got an issue here. Just a 5 moment. 6 Okay. Strike that. During this 7 hearing, to meet our obligations under Puc Rule 8 203.08, we'll ask the witness to signal to the 9 court reporter when material for which confidential treatment has been sought is to be 10 11 discussed. If there are any members of the 12 public present, we'll ask them to recess this 1.3 hearing during such segments. Are there any 14 members of the public here today? 15 [No indication given.] 16 CHAIRMAN GOLDNER: No? Okay. 17 Okay. Regarding witnesses and 18 exhibits, we note that the Company filed a letter 19 proposing a joint list on April 4th. And we 20 presume that the proposed substitution of Carrie 2.1 Pierce, from Daymark Advisors -- sorry again. 2.2 What's Carrie's last name? 23 MR. CAMPBELL: Gilbert. 24 CHAIRMAN GOLDNER: Gilbert.

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1
                    MR. CAMPBELL:
                                   Correct.
 2.
                    CHAIRMAN GOLDNER: Yes.
                                             Thank you.
 3
         screw up there.
                    The substitution of Carrie Gilbert from
 4
 5
         Daymark Advisors by Kevin Pierce from Daymark
 6
         Advisors has been assented to by all parties as
 7
         well. And, therefore, we'll approve it, if we
 8
         hear no objection?
 9
                    [No indication given.]
10
                    CHAIRMAN GOLDNER:
                                       Okay.
11
                                No objection.
                    MR. YOUNG:
12
                    CHAIRMAN GOLDNER: No objection.
                                                       Okay,
1.3
         then, it's approved.
14
                    It's our expectation that the Company's
15
         witness panel will appear first, with leave for
16
         friendly cross from other parties, followed by
17
         Commission questioning, then redirect, followed
18
         by the Department of Energy witness panel with
19
         the same sequence.
20
                    Any concerns with that approach?
2.1
                    MR. CAMPBELL: No concerns.
2.2
                    CHAIRMAN GOLDNER:
                                       Okay.
23
                    MR. YOUNG: No concerns, no.
24
                    CHAIRMAN GOLDNER:
                                       Okay. Next, do the
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1
         parties wish to make a closing statement at the
 2.
         conclusion of today's hearing or would they like
 3
         for the March 23rd support letter to stand on its
 4
         own? Beginning with the Company.
 5
                   MR. CAMPBELL: The Company has a
 6
         closing statement, yes.
 7
                   CHAIRMAN GOLDNER: Okay. Very good.
         Clean Energy New Hampshire?
 8
                   MR. SKOGLUND: I, unfortunately, will
 9
         not likely be here at the end of the hearing.
10
11
         So, I would have to forgo any closing statement
12
         then.
1.3
                   CHAIRMAN GOLDNER: Okay. Consumer
         Advocate?
14
15
                   MR. CROUSE: No closing statement.
16
         Thank you.
17
                   CHAIRMAN GOLDNER: Okay. And the
18
         Department?
19
                   MR. YOUNG: The Department of Energy
20
         just has brief remarks for the closing.
2.1
                   CHAIRMAN GOLDNER: Okay. So, we'll
2.2
         have two closings, and we'll go from there.
23
                   Okay. I see that there are six
24
         proposed exhibits for this proceeding, with
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1
         proposed Exhibits 1 and 4 requested for
 2.
         confidential treatment pursuant to 203.08.
 3
                    And I'll just check in now to see if
 4
         there are any other preliminary matters, before
 5
         we invite the Company witnesses to be sworn in by
 6
         the court reporter? Any other issues?
 7
                    [No verbal response.]
 8
                    CHAIRMAN GOLDNER: Seeing none.
                    MR. YOUNG: I do believe there were
 9
         nine exhibits filed.
10
11
                    CHAIRMAN GOLDNER: Yes. I think that's
12
         true, Mr. Young. Mr. Speidel?
1.3
                    MR. SPEIDEL: I'm looking at the
14
         docket. There are nine.
15
                    CHAIRMAN GOLDNER: Nine, yes.
16
                    MR. CAMPBELL: Nine total, two of which
17
         are confidential.
18
                    CHAIRMAN GOLDNER: Okay. Thank you.
19
         Yes, see if I show nine on my screen. Okay.
20
         Yes, I see nine exhibits, with two confidential.
2.1
                    Okay. Very good. So, let's --
2.2
         Mr. Patnaude, if you could please swear in the
23
         witnesses.
2.4
                    (Whereupon Kevin E. Sprague, Jacob S.
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[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel 1 Dusling, Andre J. Francoeur, Todd R. 2 Diggins, Christopher J. Goulding, 3 Jeffrey M. Pentz, and Kevin R. Pierce 4 were duly sworn by the Court Reporter.) 5 CHAIRMAN GOLDNER: Okay. And we'll 6 begin with Unitil direct. 7 MR. CAMPBELL: So, I'm going to start 8 on my left with Mr. Straying. 9 KEVIN E. SPRAGUE, SWORN JACOB S. DUSLING, SWORN 10 11 ANDRE J. FRANCOEUR, SWORN 12

TODD R. DIGGINS, SWORN
CHRISTOPHER J. GOULDING, SWORN
JEFFREY M. PENTZ, SWORN
KEVIN R. PIERCE, SWORN

DIRECT EXAMINATION

#### BY MR. CAMPBELL:

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Q Mr. Sprague, could us please state your name,
 employer, the position that you hold with the
 Company, and your responsibilities in that
 position?
A (Sprague) Yes. My name is Kevin Sprague. I am
 the Vice President of Engineering for Unitil

Service Corp. And, in that position, I have

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

- responsibility of all of the engineering-related matters for the Company.
- Mr. Sprague, Hearing Exhibit 1 is the Company's initial filing in this case. And included in this exhibit is the prefiled testimony that you sponsored. Was that testimony prepared by or under your direction?
- 8 A (Sprague) Yes, it was.
- 9 Q And do you have any corrections to your direct
  10 testimony that you wish to make on the stand
  11 today?
- 12 A (Sprague) Not at this time.
- 13 Q And, if you were asked the same questions in your
  14 direct testimony today, would your answers be the
  15 same?
- 16 A (Sprague) Yes, they would.
- 17 Q Do you adopt your written testimony, subject to
  18 the changes in subsequent filings, as your sworn
  19 testimony in this case?
- 20 A (Sprague) I do.
- 21 Q And, Mr. Sprague, Hearing Exhibit 2 [Exh. 4?] is 22 the Company's supplemental filing in this case. 23 And included in this exhibit are the testimony 24 and supporting attachments that you co-sponsored

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

with Mr. Dusling, Francoeur, Diggins, Goulding,
and Pentz. Was that joint testimony prepared by
you or under your direction?

A (Sprague) Yes, it was.

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- Mr. Sprague, do you have any corrections to the Company's joint supplemental testimony that you wish to make on the stand today?
- 8 A (Sprague) Not at this time.
- 9 Q If you were asked the same questions in your
  10 joint supplemental testimony, would your answers
  11 be the same?
- 12 A (Sprague) Yes, they would.
- 13 Q Do you adopt the joint supplemental testimony,

  14 subject to the changes in subsequent filings, as

  15 your sworn testimony in this case?
- 16 A (Sprague) Yes, I do.
- 17 Q Thank you, Mr. Sprague. Mr. Dusling, could you
  18 please state your name, employer, the position
  19 that you hold with the Company, and your
  20 responsibilities in that position?
  - A (Dusling) Yes. My name is Jacob Dusling. I'm a

    Principal Engineer for Unitil Service Corp. I

    have responsibilities over system planning,

    distribution planning, as well as reliability

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

- 1 planning, for Unitil Energy Systems.
- 2 Q And, Mr. Dusling, Hearing Exhibit 1 is the
- 3 Company's initial filing in this case. And
- 4 included in this exhibit is the prefiled
- 5 testimony and supporting attachments that you
- 6 sponsored. Was that testimony and the supporting
- 7 attachments prepared by or under your direction?
- 8 A (Dusling) Yes, they were.
- 9 Q Mr. Dusling, do you have any corrections to your
- direct testimony that you wish to make on the
- 11 stand today?
- 12 A (Dusling) No, not at this time.
- 13 Q If you were asked the same questions in your
- direct testimony today, would your answers be the
- 15 same?
- 16 A (Dusling) Yes, they would.
- 17 | Q Do you adopt your written testimony, subject to
- the changes in subsequent filings, as your sworn
- 19 testimony in this case?
- 20 A (Dusling) Yes.
- 21 Q Mr. Dusling, Hearing Exhibit 2 [Exh. 4?] is the
- 22 Company's supplemental filing in this case. And
- included in this exhibit are the testimony and
- supporting attachments that you co-sponsored with

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

- Mr. Sprague, Francoeur, Diggins, Goulding, and
  Pentz. Was that joint testimony prepared by you
  or under your direction?
- 4 A (Dusling) Yes, it was.
- Mr. Dusling, do you have any corrections to the Company's joint supplemental testimony that you wish to make on the stand today?
- 8 A (Dusling) No, not at this time.
- 9 Q And, if you were asked the same questions in your
  10 joint supplemental testimony, would your answers
  11 be the same?
- 12 A (Dusling) Yes, they would.
- 13 Q Do you adopt the joint supplemental testimony,

  14 subject to the changes in subsequent filings, as

  15 your sworn testimony in this case?
- 16 A (Dusling) Yes.
- 17 Q Thank you, Mr. Dusling. Mr. Francoeur, please

  18 state your name, employer, the position that you

  19 hold with the Company, and your responsibilities

  20 in that position?
- A (Francoeur) Good morning. My name is Andre
  Francoeur. I am the Financial Planning and
  Analysis Manager for Unitil Service Corp. And my
  responsibilities are primarily in the areas of

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

- strategic planning and budgeting, supporting

  investor relations, and assisting with various

  regulatory and treasury projects.
  - Q Mr. Francoeur, Hearing Exhibit 1 is the Company's initial filing in this case. And included in that exhibit is the prefiled testimony and supporting attachments that you co-sponsored with Mr. Diggins, Goulding, and Pentz. Was that testimony and the supporting attachments prepared by you or under your supervision?
- 11 A (Francoeur) Yes, they were.
- 12 Q Mr. Francoeur, do you have any corrections to
  13 your testimony that you wish to make on the stand
  14 today?
- 15 A (Francoeur) No, I do not.
- 16 Q If you were asked the same questions in your
  17 direct testimony today, would your answers be the
  18 same?
- 19 A (Francoeur) Yes.

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- 20 Q Do you adopt your written testimony, subject to
  21 the changes in subsequent filings, as your sworn
  22 testimony in this case?
- 23 A (Francoeur) Yes.
- Q Mr. Francoeur, Hearing Exhibit 2 [Exh. 4?] is the

[WITNESS PANEL: Sprague, Dusling, Francoeur,

Company's supplemental filing in this case. And included in that exhibit are the testimony and supporting attachments that you co-sponsored with Mr. Sprague, Dusling, Diggins, Goulding, and Pentz. Was that joint testimony prepared by you or under your direction?

- 7 A (Francoeur) Yes.
- 8 Q Do you have any corrections to the Company's 9 joint supplemental testimony that you wish to 10 make on the stand today?
- 11 A (Francoeur) No, I do not.
- 12 Q And, if you were asked the same questions in your
  13 joint supplemental testimony, would your answers
  14 by the same?
- 15 A (Francoeur) Yes.
- Do you adopt the joint supplemental testimony,

  subject to the changes in subsequent filings, as

  your sworn testimony in this case?
- 19 A (Francoeur) Yes.
- 20 Q Thank you, Mr. Francoeur. Mr. Diggins, please
  21 state your name, employer, the position that you
  22 hold with the Company, and your responsibilities
  23 in that position?
- 24 A (Diggins) My name is Todd Diggins. I'm the

[WITNESS PANEL: Sprague, Dusling, Francoeur,

1 Treasurer and Director of Finance for Unitil 2. Service Corp., and I'm also the Treasurer of 3 Unitil Energy Systems, Inc., and Unitil 4 Corporation's other subsidiaries. My 5 responsibilities are primarily in the areas of 6 financial planning/analysis, budget, treasury 7 operations, investor relations, insurance, and 8 loss control programs.

- Q And, Mr. Diggins, Hearing Exhibit 1 is the Company's initial filing in this case. And included in that exhibit is the prefiled testimony and supporting attachments that you co-sponsored with Mr. Francoeur, Goulding, and Pentz. Was that testimony and the supporting attachments prepared by you or under your direction?
- 17 A (Diggins) Yes, they were.
- 18 Q Mr. Diggins, do you have any corrections to your
  19 testimony that you would like to make on the
  20 stand today?
- 21 A (Diggins) No, I do not.
- 22 Q If you were asked the same questions in your 23 direct testimony, would your answers be the same?
- 24 A (Diggins) Yes.

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[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

- And do you adopt your written testimony, subject to the changes in subsequent filings, as your sworn testimony in this case?
  - A (Diggins) Yes.

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- Q Mr. Diggins, Hearing Exhibit 2 [Exh. 4?] is the Company's supplemental filing in this case. And included in this exhibit are the testimony and supporting attachments that you co-sponsored with Mr. Sprague, Dusling, Francoeur, Goulding, and Pentz. Was that joint testimony prepared by you or under your direction?
- 12 A (Diggins) Yes, it was.
- 13 Q Do you have any corrections to the Company's

  14 joint supplemental testimony that you'd like to

  15 make on the stand today?
- 16 A (Diggins) No, I do not.
- 17 Q And, if you were asked the same questions in your
  18 joint supplemental testimony, would your answers
  19 be the same?
- 20 A (Diggins) Yes.
- 21 Q And do you adopt the joint supplemental
  22 testimony, subject to the changes in subsequent
  23 filings, as your sworn testimony in this case?
- 24 A (Diggins) Yes, I do.

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

- Thank you, Mr. Diggins. Mr. Goulding, please

  state your name, employer, the position that you

  hold with the Company, and your responsibilities

  in that position?
  - A (Goulding) My name is Chris Goulding. I'm the Director of Rates and Revenue Requirements for Unitil Service Corp. And my responsibilities include all rate and regulatory filings related to the financial requirements of Unitil Energy Systems, Inc., and its affiliates.
  - Q And, Mr. Goulding, Hearing Exhibit 1 is the Company's initial filing in this case. And included in this exhibit is the prefiled testimony and supporting attachments that you co-sponsored with Mr. Francoeur, Diggins, and Pentz. Was that testimony and the supporting attachments prepared by you or under your direction?
- 19 A (Goulding) Yes, they were.

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- 20 Q Do you have any corrections to your direct
  21 testimony that you wish to make on the stand
  22 today?
- 23 A (Goulding) No, I do not.
- 24 Q And, if you were asked the same questions in your

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

- direct testimony today, would your answers be the same?
- 3 A (Goulding) Yes.
- Q Do you adopt your written testimony, subject to the changes in subsequent filings, as your sworn testimony in this case?
- 7 A (Goulding) Yes, I do.
- 8 Q Mr. Goulding, Hearing Exhibit 2 [Exh. 4?] is the
  9 Company's supplemental filing in this case. And
  10 included in that exhibit are the testimony and
  11 supporting attachments that you co-sponsored with
  12 Mr. Sprague, Dusling, Francoeur, Diggins, and
  13 Pentz. Was that joint testimony prepared by you
  14 or under your direction?
- 15 A (Goulding) Yes, it was.
- Do you have any corrections to the Company's
  joint supplemental testimony that you'd like to
  make on the stand today?
- 19 A (Goulding) No, I do not.
- 20 Q And, if you were asked the same questions in your
  21 joint supplemental testimony today, would your
  22 answers be the same?
- 23 A (Goulding) Yes.
- Q Do you adopt the joint supplemental testimony,

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

subject to the changes in subsequent filings, as your sworn testimony in this case?

A (Goulding) Yes, I do.

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- Thank you, Mr. Goulding. Mr. Pentz, please state
  your name, employer, the position that you hold
  with the Company, and your responsibilities in
  that position?
  - A (Pentz) My name is Jeff Pentz. I work for Unitil Energy. And my responsibilities primarily have to do with wholesale power supply procurement, renewable energy credit procurement, and market research and operations.
  - Q Mr. Pentz, Hearing Exhibit 1 is the Company's initial filing in this case. And included in that exhibit is the prefiled testimony and supporting attachments that you co-sponsored with Mr. Francoeur, Diggins, and Goulding. Was that testimony and the supporting attachments prepared by you or under your direction?
  - A (Pentz) Yes, they were.
- 21 Q Do you have any corrections to your direct
  22 testimony that you'd like to make on the stand
  23 today?
- 24 A (Pentz) I do not.

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

- And, if you were asked the same questions in your direct testimony today, would your answers be the same?

  A (Pentz) Yes.
- Do you adopt your written testimony, subject to
  the changes in subsequent filings, as your sworn
  testimony in this case?
- 8 A (Pentz) Yes.
- 9 Q Mr. Pentz, Hearing Exhibit 2 [Exh. 4?] is the
  10 Company's supplemental filing in this case. And
  11 included in that exhibit are the testimony and
  12 supporting attachments that you co-sponsored with
  13 Mr. Sprague, Dusling, Francoeur, Diggins, and
  14 Goulding. Was that joint testimony prepared by
  15 you or under your direction?
- 16 A (Pentz) Yes, it was.
- 17 Q Do you have any corrections to the Company's
  18 joint supplemental testimony that you wish to
  19 make today?
- 20 A (Pentz) I do not.
- 21 Q And, if you were asked the same questions in the 22 joint supplemental testimony, would your answers 23 be the same?
- 24 A (Pentz) Yes.

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

- Do you adopt the joint supplemental testimony,

  subject to the changes in subsequent filings, as

  your sworn testimony in this case?
  - A (Pentz) Yes, I do.

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- Q Thank you, Mr. Pentz. Mr. Pierce, please state your name, employer, and the position that you hold with your firm?
  - A (Pierce) My name is Kevin Pierce. I'm a Senior

    Consultant at Daymark Energy Advisors. Among
    other duties, I support a variety of analyses for
    renewable energy projects, including several
    economic benefits reports.
  - Q Mr. Pierce, Hearing Exhibit 1 is the Company's initial filing in this case. And included in this exhibit is the prefiled testimony and supporting attachments that you co-sponsored with Carrie Gilbert. Was that testimony and the supporting attachments prepared by or under your direction?
- 20 A (Pierce) Yes, they were.
- 21 Q Mr. Piece, do you have any corrections to you direct testimony that you wish to make on the stand today?
- 24 A (Pierce) No, I do not.

# [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

- 1 Q And, if you were asked the same questions in your
- direct testimony, would your answers be the same?
- 3 A (Pierce) Yes.
- 4 Q And, as you've just affirmed, Ms. Gilbert was a
- 5 co-sponsor of your prefiled testimony.
- 6 Ms. Gilbert is no longer appearing as a witness
- 7 for the Company in this case, correct?
- 8 A (Pierce) Yes, that is correct.
- 9 Q And do you adopt the prefiled testimony that you
- submitted jointly with Ms. Gilbert as your own
- sworn testimony, in its entirety, subject to the
- changes in subsequent filings?
- 13 A (Pierce) Yes, I do.
- 14 Q Mr. Pierce, Hearing Exhibit 7 [Exh. 9?] is a
- 15 supplemental filing, which contains an updated
- 16 report of Daymark's Indirect Benefit Analysis.
- 17 Was that updated report prepared by you or under
- 18 your direction?
- 19 A (Pierce) Yes, it was.
- 20 Q Mr. Piece, do you have any corrections to
- 21 Daymark's updated Indirect Benefits Report that
- you wish to make today?
- 23 A (Pierce) No, I do not.
- 24 Q And do you adopt the updated Indirect Benefits

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

Report as part of your sworn testimony in this case?

A (Pierce) Yes, I do.

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MR. CAMPBELL: Thank you, Mr. Pierce.

The witnesses are now available for cross-examination.

CHAIRMAN GOLDNER: Thank you, Attorney Campbell.

Just to straighten out the exhibit list, which we both had problems with at the outset. There was a "1 through 6" sequence and a "1 through 9" sequence. And I just want to go over the exhibits sort of one-by-one, and tidy that up before we get started.

MR. CAMPBELL: Okay.

as the confidential version of the "Petition for Approval of Investment and Rate Recovery;
"Exhibit 2" is the same, non-confidential version; "Exhibit 3" is the "Corrected Bates Page 00060"; "Exhibit 4" is the confidential "Joint Supplemental Testimony". I think, when you were talking to the witnesses or questioning the witnesses, you referred to that as "Exhibit 2".

# [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

1 MR. CAMPBELL: Ah. Apologies for that. 2. Yes, I should have been referring to "Hearing 3 Exhibit 4". CHAIRMAN GOLDNER: Four. 4 5 MR. CAMPBELL: It's the joint 6 supplemental; "4" is the confidential, "5" is the 7 redacted. You're correct. CHAIRMAN GOLDNER: Perfect. Perfect. 8 9 And then -- and then, when you were talking to 10 Mr. Pierce, I think you referred to that, to his exhibit as "Exhibit 7", and that's actually 11 "Exhibit 9". 12 1.3 MR. CAMPBELL: That's correct. Lawyers 14 can't count very well, Chairman Goldner. But 15 you're correct. CHAIRMAN GOLDNER: Neither can your 16 17 Chair, apparently, because I made the same 18 mistake at the outset. So, I think we've got 19 that squared away and we have the exhibit numbers 20 sorted. So, thank you for working through that 21 detail.

Okay. Very good. So, let's move to Clean Energy New Hampshire, if there's any questions for the witness panel?

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# [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

MR. SKOGLUND: We do not have any questions at this time.

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And does the Office of Consumer Advocate have any questions for the panel?

CHAIRMAN GOLDNER: Okay. Very good.

MR. CROUSE: Not at this time. Thank you.

CHAIRMAN GOLDNER: Okay. Very good.

And we'll move to Attorney Young and the New

Hampshire Department of Energy then?

MR. YOUNG: Nothing from the Department of Energy.

CHAIRMAN GOLDNER: Okay. Well, that makes it quicker. We will then move to Commissioner questions, beginning with Commissioner Simpson.

CMSR. SIMPSON: We're moving efficiently today. Thank you all for being here.

BY CMSR. SIMPSON:

Q So, I first want to ask about the system operating as a load reducer. As a general matter, is there any risk that the system could provide a situation of reverse power flow at the substation?

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## [WITNESS PANEL: Sprague, Dusling, Francoeur,

A (Sprague) No. The way that it's connected to the system, we do not foresee a situation where it would result in reverse power flow.

Q Okay. Thank you. So, now that we've cleared that up, I'd like to ask you about the RFP process. So, without going into any confidential or proprietary information, can you just enlighten us as to how that process unfolded?

You initially provided an RFI;

presumably, you received some feedback from that.

The Company then issued a competitive RFP. We know that you ultimately selected ReVision

Energy. I think we're just interested in how did that process unfold? Do you feel that it was competitive? Was there interest from the developer community generally? And what -- what did you ultimately weigh when you were analyzing the responses?

A (Dusling) Sure. It was really almost like a three-stage approach. We initially issued an RFI to gather information on what may be required for site-specifics, general cost information. I believe that was submitted to five participants. I think it was three that proposed -- that

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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submitted proposals to that. That was used for initial site evaluation, just to try to pinpoint, you know, where we might construct a facility like this.

Once we narrowed it down to this

Kingston location, we issued a preliminary RFP to
that same group of vendors, plus, I think, two
additional vendors -- sorry, I take that back,
let me correct myself -- to that same group of
vendors. I think we got two responses to that,
which answered the questions more specific to
that site and types of installations; fixed
panels versus single-axis tracking versus dual
access tracking, upsizing DC capacity, you know,
similar AC to DC capacity, those type of
questions, so we could try to fine-tune what
would go into that final RFP.

And then, that final RFP was submitted, and that one went to the five, plus two additional, I think a total of seven. We received, if I recall correctly, three responses. They were engaged, very complete responses. I think it was a fairly competitive process.

And, when you ultimately evaluated the winning

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

bidder's proposal, what were some of the factors

that stood out to you, in terms of meeting your

perceived needs for this Project?

- A (Dusling) So, in a lot of the cases, the winning bidder had a lot of domestic content. They were locally -- they were a local New Hampshire company, located right in Brentwood, fairly close to the facility.
- Q Uh-huh.

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- A (Dusling) Their material they were recommending or proposing seemed the highest quality, good warranties. You know, they had a good O&M plan.

  Their -- I'll left Andre talk to the financials, but their financial model plugged into our model very nicely as well.
  - On the "domestic content", on Exhibit 5, I was confused by some of the numbers. So, I'm going to refer to as in the document, the pdf document, there seemed to be two numbers in the footer of many of the exhibits, so I wasn't sure which was the Bates page.

But, on Exhibit 5, *Pdf* Page 35, there's some discussion of the analysis of the Production Tax Credit versus the Investment Tax Credit. And

# [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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something that you noted was that there's a "10 percent bonus tax credit for domestic content."

Explain to me how or if the Company is trying to reach that 10 percent, and what the risks are? You mentioned the domestic content provided by the winning bidder, I presume that's part of this analysis?

A (Dusling) Yes. So, in the ReVision proposal, they feel we will meet that 40 percent domestic content for 2024 construction. But it will ultimately come down to when we actually, you know, go out and source that material.

So, you know, at this point we're thinking we will receive it, but it wasn't included in the financial analysis.

- Q Okay. So, the financial analysis does not include that 10 percent bonus tax credit?
- A (Francoeur) No. For a conservative element, we didn't include the domestic content bonus in the PTC rate.
- And could you point us to the figure that would be impacted by the 10 percent, if you achieve that domestic content percentage?
- 24 A (Francoeur) Are you asking where in testimony we

# [WITNESS PANEL: Sprague, Dusling, Francoeur,

- could change that number or what the number would
- 2 be if we achieved the domestic content?
- 3 Q If you just show us the exhibit and the line item
- 4 or items that would be reduced by 10 percent,
- 5 that's what I'm asking?
- 6 A (Francoeur) Okay. Give me a minute to hunt that
- 7 down?
- 8 Q Yes. Take your time.
- 9 A (Francoeur) Thank you.
- 10 Q And is the -- while Mr. Francoeur is looking that
- up, is the bonus figure 40 percent of domestic
- 12 content?
- 13 A (Dusling) For -- if it's constructed in 2024,
- 14 yes.
- 15 Q Okay. So, that would be the assets individually?
- So, panels, racking, wire?
- 17 | A (Dusling) Yes, steel components. Yes, inverters.
- 18 Q And what -- I saw that Solectria is the provider,
- I think, of the string inverters?
- 20 A (Dusling) I believe so, yes.
- 21 Q And that's a -- I think that's a U.S. company,
- 22 correct, out of Massachusetts?
- 23 A (Dusling) I believe so, yes.
- 24 Q So, what are the elements in the design that you

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

- think are most likely to be provided for domestic providers or manufacturers?
- A (Dusling) Based on ReVision's proposal, I think a majority of it is going to be all the steel components and wire, for the most part.
- 6 Q Okay.
- 7 A (Francoeur) The PTC rate that we would look to
  8 change in the benefit-cost ratio model to reflect
  9 the 10 percent domestic content bonus would be in
  10 Hearing Exhibit 4, Bates Page 156, which I
  11 believe is the number in the middle of the bottom
  12 of the page. And that would be on Line 5, in
  13 year one, would be the number we would update.
- Q Okay. Just a moment. Okay. So, 156, and repeat the line number, if you would please?
- 16 A (Francoeur) Line number 5.
- 17 Q Okay. So, explain that for me. I'm seeing, in
  18 year one, it's 286 hundredths is the figure
  19 that's listed, correct?
- 20 A (Francoeur) That is correct.
- 21 Q So, what would that figure go to?
- 22 A (Francoeur) That figure would increase to
- approximately 3.1 cents.
- 24 Q Okay. And then, are you able to estimate what

## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

the overall revenue requirement change might be?

- A (Francoeur) I couldn't estimate that as I sit
  here today. But, in testimony, we do show in the
  simulation analysis what the impact on the net
  present value and benefit-cost ratio would be if
  we achieved that. And I can point you to that in
  the testimony, if that would be helpful?
- 8 Q Sure. Is that in Exhibit 5?
- 9 A (Francoeur) I think so. If you give me a second,
  10 I can confirm?
- 11 Q Sure.

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- 12 A (Francoeur) Yes, Commissioner. And it does look
  13 like Hearing Exhibit 5, Bates Page 059. And, on
  14 this page, what we're showing is a tornado graph
  15 of the key variables included in the simulation
  16 analysis. We did it to help quantify some of the
  17 risks associated with the Project.
- 18 Q Uh-huh.

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A (Francoeur) And what the tornado graph seeks to do is show the smallest and largest relative impact a specific variable can have on the results. So, here, and the quality looks like we may have lost some in printing the hearing exhibits, but you can see that the -- whether we

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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get the domestic content, it will impact the net present value, looks to be approximately 230,000 or so.

Okay. That's helpful. And this, these graphs and this analysis, was very helpful. It was -- I thought it was very nicely done. And I appreciated the graphs that were provided in this exhibit. And the way -- or, the factors, I should say, that you categorized as "risks", that was helpful in my analysis, and I believe my Commissioners -- my fellow Commissioners as well.

Okay. So, going back to the RFP, you note in testimony that the selected proposal provides the best overall value. Can you elaborate on what you consider to be a value? (Dusling) I think it was all those components we talked about before. In the financial analysis, their proposal provided the best, you know, best net present value and rate of return. I think it was also them being locally sourced for us, locally located, right up the road from the site, a New Hampshire-based company. And, like I said, you know, the quality of the products, the quality of their proposal. And, you know, after

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

meeting with their team, you know, I think the 1 2 Company felt it was the best overall choice. One of the elements that looked like it changed 3 Q 4 from your initial to the supplemental was the 5 warranty periods for some of the elements. 6 looked like the system warranty increased by five 7 years, and then the inverter warranty, you 8 submitted a correction, that I think it had originally been 15 or 20, and then it moved to 5 9 10 and 10? 11 Α (Dusling) Yes. 12 Can you explain, on the overall system, why that 1.3 increased overall or why you felt that the vendor 14 that you selected was able to warranty the system 15 for an additional five years? 16 (Dusling) I think it was more of the 17 manufacturers they chose and their past 18 experience. So, you know, the tracking system, 19 the racking system they chose seemed to be, you 20 know, a little bit more maintenance-free, to give 21 it that longer life. The inverters, you know, 2.2 the language I remember --23 [Court reporter interruption.]

CONTINUED BY THE WITNESS:

## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

A (Dusling) the panels themselves had a slightly longer warranty than what was provided in the original preliminary RFP as well. So, I think it was just more fine-tuning what we were asking for.

#### BY CMSR. SIMPSON:

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- And did you feel that there were any concessions in the proposal, things that the Company didn't ultimately get that they initially sought? Or, did you feel that everything that you sought in the RFP was accommodated?
- A (Dusling) No, I think they accommodated almost everything. Yes.
- Q Okay. In the supplemental testimony, I just want to find the right Bates number, instead of going off the pdf. Oh, look at that, it's the same.

So, on Bates Page and Pdf Page 20, you mention that some of the intervenors were interested in understanding your sensitivity and benefit-cost analyses. What factors were they interested in?

MR. CAMPBELL: Commissioner Simpson, if I may, I'm having trouble finding the reference.

Is there a line on that page please?

## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

CMSR. SIMPSON: Yes. So, it starts on Bates Page 19, Line -- or, Bates Page 019, Line 18. "The Commission and intervenors also expressed an interest in understanding the sensitivity of the Benefit-Cost Analysis to certain assumptions and inputs."

MR. CAMPBELL: Thank you.

CMSR. SIMPSON: Uh-huh.

#### BY THE WITNESS:

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A (Francoeur) I think what we're referring to in our joint testimony there is two main issues.

And one of those was a discussion of risks, which we included both qualitative and quantitative discussions in the supplemental testimony to address some of the concerns that I think were brought up in the prehearing conference, and as well by the intervenors.

Second, I think some of the concerns, not to put words in their mouths, but that, of the intervenors, were specific to maintenance expense associated with the Project and decommissioning expense.

And, from our initial filing to the supplemental benefit-cost model, we included a

## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

number of things that we thought added a degree of conservatism to reflect some decommissioning and maintenance costs. To elaborate a little bit on those, it would be we added a line item in the revenue requirement for decommissioning expense.

And we also added a capital expense for repairs after the warranty periods ended for both the PV modules, as well as some of the racking equipment.

#### BY CMSR. SIMPSON:

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- Q Okay. Thank you. And your supplemental analysis also includes future capital replacements. Can you address what elements of the Project you would foresee requiring capital replacement, or the more likely elements that might require a capital replacement in the future?
- A (Dusling) I think the large one is the inverters.

  So, we're assuming replacement of all inverters throughout the life of the Project. Some of the modules, after their warranty period, could be from damage or just, you know, reduced production. As well as some of the racking components, more specifically, the motor components, since this is a single-axis tracking

[WITNESS PANEL: Sprague, Dusling, Francoeur,

Diggins, Goulding, Pentz & Piercel 1 system. So, we're anticipating some repairs and 2. possibly replacement of those, further out, 3 further down, you know, the 20 plus years of life. 4 5 And would you be able to point us to your 6 financial model that accounts for those costs, 7 and how they're predicted out over the life of 8 the Project? 9 Α (Francoeur) Yes, I can provide that. If you can 10 just give me a moment to find the cites? 11 Take your time. Q 12 (Francoeur) On Hearing Exhibit 4, which I believe 1.3 is the confidential hearing exhibit, beginning on 14 Bates Page 192, we can see some of the 15 replacement capital items on this page. And, 16 specifically, Row 51 on this page --17 Q Just a moment. 18 CHAIRMAN GOLDNER: We have an abundance 19 of Bates pages. Is it the center large number 20 Bates page or the one on the lower right? 2.1 MR. CAMPBELL: So, for all the hearing 2.2 exhibits, it's the Bates number at the center 23 bottom of the page.

CHAIRMAN GOLDNER: Very good.

Thank

[WITNESS PANEL: Sprague, Dusling, Francoeur,

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BY CMSR. SIMPSON:

- Q Go ahead, Mr. Francoeur. Thank you.
- A (Francoeur) So, on this page, we're showing, again, on Row 51, the replacement of the solar inverter, which we assigned a 20-year life, I believe, and this is the replacement of that.

  And the calculation for that is the cost of the Solar Inverter 1, the future value, assuming a

Turning a few pages forward, on Bates

Page 194 of the same hearing exhibit, we show a

schedule that highlights the maintenance capital

costs. Which we delineate, when I mentioned the

solar inverter, is kind of a wholesale

replacement, as far as the financial model.

Whereas, as the maintenance capital cost is on an

"as needed" basis, if you will. And we applied a

percentage of the initial original cost, plus a

time value of money factor over -- as if those

costs are going to be incurred once the warranty

periods for the PV modules and the racking

equipment conclude.

Is that why you used a 10-year period, reflecting

2 percent annual escalation rate applied to that.

[WITNESS PANEL: Sprague, Dusling, Francoeur,

Diggins, Goulding, Pentz & Piercel 1 the warranty period? 2 (Francoeur) I'm not sure I followed the question. 3 Apologies. 4 On the line that explains the years, we go from 5 "Year 0" to "Year 10". So, you forecasted this 6 out for 10 years? 7 Α (Francoeur) If I may, the Bates pages continue on 8 to 197, and each page shows 10 vintage years, if 9 you will. 10 Okay. 11 (Francoeur) So, you can see, on Bates Page 194, 12 the "Expected Replacement Percentages" are all 13 zeroes, because the warranty period is --14 Ah. 0 15 Α (Francoeur) -- it's still present. But, if you 16 flip forward a couple pages, to Bates Page 196, 17 you'll see that the expected replacement for the 18 PV modules increases to a half a percent on 19 Line 5. 20 Okay. Okay, great. That's helpful. 21 clarifies that. 22 Going back to Bates Page 031 in the 23 same exhibit. So, Exhibit 5, redacted. There's

a table, Table 6, that shows "Updates to Design

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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Characteristics". Can you walk us through the six factors that are categorized as "inputs", and the relative change from the initial to the supplemental filing please?

(Dusling) Sure. So, the "Expected Life of the Project", from "30 years" to "40 years", the initial 30 years was based on the preliminary RFP; 40 years was based on ReVision's proposal that was selected for the Project. They were very confident that 40 years is reasonable, as long as we assume that inverter replacement. So, that's where the "40 years" come from.

The "System Capacity" increased slightly on the DC side. I think that was more specific to, you know, our specific request and what could be fit in the area we were looking at. And then, the "4.88 megawatt (AC)" came from, you know, inverter sizings that are being proposed. You know, this includes, I think, 39 string inverters. If we went to 40, it would push us over, just at or above that 5 megawatt value. So that was just a function of the inverter selected and its size.

Q And, on this one, the relative differences

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

between the DC and AC, from the initial to the supplemental, the DC increased, but the AC decreased.

A (Dusling) Correct.

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- 5 Q Could you explain that for us?
  - A (Dusling) So, I think, in the initial preliminary RFP, you know, the inverter was able to be sized more closer to that 5 megawatts. I think that initial proposal was a central inverter that was going to be tuned to 4.99 megawatts. And then, on ReVision's proposal that we went with on the -- in the supplemental filing, they're using string inverters that are I think it's 125 kW per inverter. So, it's just -- it's a design change at that point. There are some benefits to that design change that we can talk about.

And then, the overall system

capacity -- the DC capacity I think was just

based on, you know, the information available to

the bidders at the time. You know, the

preliminary RFP, when we sent that out, it was

just, you know, "Here is a map of the site."

- 23 O Uh-huh.
- 24 A (Dusling) The final RFP included an actual

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

existing conditions plan where wetlands were
located, so they had much more freedom to be able
to figure out where they can place equipment.

Q Okay.

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A (Dusling) The next one, the "Degradation Rate", just changed based on the modules that were selected. We dug more into the modules, got the actual data from the module manufacturer, opposed, in the preliminary RFP, it was, you know, just kind of what was stated to us during that process.

And then, the following ones, the "Capacity Factor", "Capacity at Peak Hour", and "Capacity at" -- so, the ISO peak hour and the monthly peak hour, are strictly a function of, you know, the production model that was run against what was being proposed.

- Q So, the supplemental filing reflects a more accurate selection of equipment with particular characteristics?
- 21 A (Dusling) Correct.
- 22 Q Okay.
- 23 A (Dusling) Yes.
- 24 Q Thank you.

#### [WITNESS PANEL: Sprague, Dusling, Francoeur,

A (Dusling) And more specific to the site as well.

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Q So, we touched on the bonus tax credit of 10 percent. On Bates 035, there's a comparison of the Production Tax Credit versus the Investment Tax Credit. Would one of the witnesses be able to walk us through the comparison of the two federal tax credits, and ultimately why you selected what you did, under the IRS

Normalization Rules?

the prehearing conference, the Company stated that we were continuing to investigate ways that we could optimize our selection of the tax credits to the benefit of our ratepayers. And, through that process, we leveraged the Production Tax Credit in the financial model. And the biggest benefit for electing to use the Production Tax Credit, as opposed to the Investment Tax Credit, is that the PTC, short for "Production Tax Credit", is not subject to IRS Normalization Rules.

So, for that reason, and opposed to the ITC, which is subject to IRS Normalization Rules, which dictate that we have to flow back the tax

## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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credits to customers ratably over the life of the assets. So, simply put, a dollar of a tax credit is going to be provided back to ratepayers over a 40-year period. Whereas, the Production Tax Credits, which are generated over the first ten years of the facility's life, are not subject to IRS Normalization, and can be provided back to ratepayers as soon as they are created.

So, simply put, switching to the Production Tax Credit unlocks pretty significant time value of money benefits for the ratepayers.

Q Is there a downside to utilizing the PTC?

energy storage system.

A (Francoeur) Not that I can identify right now.

And I would add, you know, if the Company does elect to utilize the PTC, if, in the future, we look to add battery storage, we're not precluded from seeking an Investment Tax Credit on that

I might add that the Company is still going to continue, if this Project moves forward, to make sure that we're maximizing any potential value. As I think we discussed in the prehearing conference, the Inflation Reduction Act allows for the transfer of Investment Tax Credits for

## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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cash. However, that pathway is still -- has a fair degree of uncertainty. That market doesn't exist yet. We have to wait for these tax credits to be generated, the tax filings to be made, and the market to come into existence.

And, additionally, it remains to be seen whether the Company was able to transfer the tax credits, whether that would allow us to circumvent IRS Normalization, we would need clarification from the IRS on that. But that's still an option that the Company has, is looking at. But, as I sit here today, I don't think the PTC has downsides.

Q Okay. Thank you. Moving along to Bates
Page 040, there's a discussion of the REC
production. And you note, starting on Line 17,
that "The Project will generate RECs that will be
retained either to meet Unitil's Default Service
RPS obligations or sold into the market and
credited back to customers."

Is there any reason why you would not use these RECs as an offset, as opposed to selling them into the market?

24 A (Pentz) I think, really, to answer the question,

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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it really depends on how much default service load there is available. You know, with municipal aggregations and more loads switching over to competitive supply, there may be surplus RECs generated to apply that to default service. In that case, we would have no choice but to sell the RECs. Otherwise, they would essentially expire worthless.

- So, the obligation for the communities that aggregate, that RPS obligation transfers to the aggregation, and then you would no longer have the obligation for that pool of your customers, correct?
- A (Pentz) That is correct. Right. It really -the amount of RECs that a load-serving entity
  needs to purchase is dictated by retail sales
  volume. Naturally, if default service sales
  continue downward, then we would need less RECs.
- Q Okay. And then, there is some discussion about "permitting" on Bates Page 043 associated with site control risk. Can you give us an update on where you stand with permitting? If you've received any permits yet? Any that are outstanding? If you haven't started pursuing

# [WITNESS PANEL: Sprague, Dusling, Francoeur,

some permits yet, et cetera?

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- A (Dusling) So, right now, we've completed a lot of the I'll say "assessments". All our wetlands delineations are complete. The Natural Heritage Bureau, you know, endangered species review, archaeological surveys, environmental surveys, those are all complete. We have yet to actually file a permit. We've kind of had preliminary meetings with some of the agencies, Board of Selectmen in Kingston, informal discussions with New Hampshire DES, just, you know, regarding, you know, that the permit is coming. And, at this point, we're expecting to submit the first round of permits in the next couple weeks.
  - And how has your stakeholder outreach gone? What efforts have you made to reach out to abutters, different agencies, the municipality? Let us know how those conversations are going.
  - A (Dusling) So, at this point, we've met with the
    Town of Kingston engineer. We've also met
    informally with the Board of Selectmen informing
    them of the Project. Those were very positive.
    I would say all meetings we've had to date have
    been positive in nature. We're currently working

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

with, you know, police and fire on what's going
to be required for access, and those type of
things. So, --

Q Uh-huh. How about abutters?

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- A (Dusling) At this point, other than one abutter, we haven't really talked to any of them.

  There's -- I mean, it's out there in the middle of the woods, for the most part.
  - Q Okay. And then, let's just walk through the quantitative risk assessment, and the associated Monte Carlo analysis please. We touched on it earlier. But, if you would just describe the thinking, what factors you thought were appropriate to evaluate, the tool that you used ultimately to perform the analysis of the simulation, and what the probabilistic outcomes were?
- A (Francoeur) So, we started the discussion of quantitative risk assessment with the stress test results, which is shown as "Table 11", Bates

  Page 052 of Hearing Exhibit 5. And the value of a stress test is to identify the specific variable while holding all else constant, and identify how much that variable needs to change

### [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

to reach a breakeven point, which, in the context of this, would be a net present value of zero or a benefit-cost ratio of 1.0.

This is a fairly simple analysis. So, we leveraged a software called "@Risk" to run a simulation analysis. And the benefit of the simulation analysis, unlike the stress test, is it allows some of those key variables to change independent of one another, which is more realistic of the nature of how reality is, that more variables will change at once than one at a time.

Q Uh-huh.

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14 (Francoeur) So, the Monte Carlo analysis allowed 15 us to select a handful of key variables that we 16 believe had the largest impact on the economic 17 results. And we assigned statistical properties 18 and distributions for each variable, to allow 19 them to assign possibilities based on the various 20 simulations. And we ran 100,000 scenarios. 21 the key variables that we identified to include 2.2 in the simulation were the annual capacity 23 factor; the capacity at both the annual and 24 monthly peak; the change in the depreciable

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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capital costs; the change in REC prices; the ISO-New England energy futures, which dictates the energy rates not only in the first four years, but the point at which they jump off; the escalation rate for both direct benefits and all other escalation rates, excluding the direct benefits; and, as we discussed earlier, the PTC domestic content bonus, whether we would achieve that or not.

We, based on the results, concluded that the results were normally distributed, given the close proximity between the mean and the median, the limited skew value, and the shape of the curve. The results indicated an 84 percent -- 84.3 percent probability that the results would be net present value zero or greater.

And I'd also add that this does not include the net present value of any of the indirect benefits that were calculated by Daymark, which the Company considers just as real as the direct benefits, but are somewhat more difficult to quantify in this context.

Table 12, on Bates Page 058, shows the

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

percentile results from 1.0 to 99.0, and what the resulting net present value and benefit-cost ratio were.

- Q So, from this table, it looks like somewhere between 10 and 15 percent is where the benefit-cost falls below unity, correct?
- A (Francoeur) That's correct.
- Q So, you're forecasting that there's an 85, 80 percent likelihood that the Project will provide positive outcomes for customers?
- 11 A (Francoeur) That's correct.
- Q Okay. Thank you. And then, I would like to jump over to the Daymark witnesses please.

So, Mr. Pierce, if you might just

elaborate on your overall summary of the indirect

benefits, and how you would suggest a

consideration for quantification of those?

- 18 A (Pierce) Sure. Just can you hear me all right?
- 19 O Yes.

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A (Pierce) Great. Thank you. So, we did three different analyses of indirect benefits of the Kingston Solar Project. First being the economic benefits, which are the overall economic output generated by spending of the Project, as well as

### [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

job years. We also did an analysis of the emissions, emissions savings, and the cost of -the avoided costs of those savings. And we also did a Demand Reduction Induced Price Effect, or DRIPE, analysis, that measures the change in the avoided energy -- the market price change of the avoided energy of that.

Overall, the economic benefits showed a total direct, indirect, and induced impacts of about \$12 million --

Q And can you --

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- 12 | A (Pierce) -- on a net present value basis.
- 13 Q Yes. And can you point to the page that
  14 describes that please?
  - A (Pierce) Sure. I actually don't have the Bates page in front of me. However, Supplemental Exhibit GPP-2, Page 8 of 31, has the Table 2, which is the total economic benefits of the Project.
- 20 Q Table 2, okay. Thank you. Continue.
  - A (Pierce) Yes. So, that has -- that shows the present value of economic benefits of \$12 million, and approximately 95 job years over the course of the Project's life, the 40-year life.

# [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

- Q Can you explain what that means, "job years"?
- A (Pierce) Sure. Certainly. So, one person
  employed full-time over the course of an entire
  year is "one job year". If that same person is
  employed for a second year, that is counted as
  "two job years", that, even though it's the same
  person in the same job, doing the same thing, for
  over two years. So, if you want an average job

creation per year, you just divide by the number

- 11 Q So, it would be one year where 95 people are
  12 employed would be equivalent to one person
  13 working for 95 years?
- 14 A (Pierce) That's correct.
- 15 Q Okay. Thank you.

of years.

- 16 A (Pierce) For the -- we also did the "Emissions

  17 Benefit Summary" on Table 4, which is located on

  18 Page 10 of 31 of the Supplemental GPP-2 exhibit.
- 19 O Yes.

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- A (Pierce) In this table, we find that the CO2 savings are 73,000 tons approximately, and the nitrous oxide emission savings are 6.9 --
- [Court reporter interruption.]

#### 24 | CONTINUED BY THE WITNESS:

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

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A (Pierce) Sure. So, the CO2 emissions are 73,500, and the nitrous oxide are 6.97 tons. Both of these have a net present value emissions savings of 2.0 million for the carbon dioxide, and for nitrous it's 47,000. There's a missing zero
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#### BY CMSR. SIMPSON:

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Q For the CO2, you must have either imputed or assumed a dollars per ton figure?

there, I apologize for that.

- A (Pierce) That is correct. Yes. We have used the Social Cost of Carbon, as defined by the current Biden Administration, which, subject to check, is \$49.
- 14 O Per ton?
- 15 A (Pierce) Per ton, that's correct.
- 16 Q Okay. Thank you.
- 17 A (Pierce) We describe that further in the report.
- 18 Q Uh-huh.
- 19 A (Pierce) And then, we talk about the Demand
  20 Reduction Induced Price Effect, which is, again,
  21 as I said, the effects of reducing overall demand
  22 on the system, and the subsequent price reduction
  23 paid out in the market. And we find that the
  24 price reduction effect of the Project would be

#### [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel 1 about \$567,000 on a present value basis, which is 2. an equivalent of \$0.0067 per megawatt-hour. 3 CMSR. SIMPSON: Okay. All right. 4 Thank you. 5 I think that's all I have for these 6 witnesses at this time. 7 CHAIRMAN GOLDNER: Okay. Thank you, 8 Commissioner Simpson. We'll move to Commissioner 9 Chattopadhyay. 10 And I think I'll just jump in, excuse 11 me, Commissioner. We'll take a break at 10:30, 12 and then return about 10:45. So, just as a time 1.3 check. 14 CMSR. CHATTOPADHYAY: Good morning. Since we talked about the indirect benefits at 15 16 the end, when Commissioner Simpson was asking 17 questions, it's probably better for me to first 18 go there, even though I'll go to the other issues 19 as well. 20 BY CMSR. CHATTOPADHYAY: 21 On the economic benefits I heard, you said 2.2 "\$12 million". That's gross, right? 23 Α (Pierce) That's correct.

Have you done any analysis on what the net

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

benefits might be?

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- A (Pierce) No, we have not.
- 3 Q Do you have any thoughts on that?
  - A (Pierce) It's difficult to ascertain for sure.

5 It's best to think of these benefits as all the

6 spending and all the jobs that are needed to

7 support a project of this size. Determining

8 where the slack in the economy, so to speak, and

9 where -- how much of those jobs, in specific,

10 would be new jobs, that is difficult to

11 determine. I don't have any real estimate of

12 that at this point.

13 Q Do you agree that, let's say I'm looking for a

particular job, and given where I am right now,

15 when I'm going to assess whether I should take it

or not, it would depend on whether there's an

17 opportunity, you know, it makes sense looking at

the opportunity cost?

- A (Pierce) Yes.
- 20 Q Okay. So, part of that is why I'm asking, you

21 know, it's important to have a sense of what the

net benefits are, because you want to take a look

at what other alternatives there might be. So,

have you -- have you seen any of that kind of

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

1 analysis anywhere else?

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- A (Pierce) Not off the top of my head.
- Q Have you worked with the Company to figure out, if these benefits, as you have calculated, were also counted as part of the benefits overall, what would the benefit-cost ratio be?
- A (Pierce) We have not. Because I think, as we discussed -- we may have discussed last time, the indirect benefits accrue to New Hampshire as a whole, and even spill over into different states. Although, these are -- we tried to bound these in New Hampshire. Whereas, the benefits that have been calculated by the other witnesses are direct
- Q Okay. I just wanted to confirm.

to Unitil ratepayers.

So, let's go to the issue of the

Project life being 40 years, that -- can you

give -- walk me through the thinking again how

you moved from 30 years to 40 years? Were they

both based on the first, you know, sort of first

round of RFPs, and then, as you finalized it, you

have a different number. So, is that how it

happened?

(Dusling) Yes. So, the initial 30 years was

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[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

based on those preliminary, high-level RFP that we were using to gain information, and kind of base a lot of the detailed financials on. And the "40 years" came back due to the detailed final RFP for this specific location and the specific facility we were looking to build.

- Q So, in both cases, it was responses from the bidders, right?
- A (Dusling) Correct. I would say we relied on the solar specialists for assistance with that.
- Is that sort of typical, where you go from 30 years, you know, even if it's sort of preliminary, and then you look at the RFP later, that's 40 years? Is that typical? It's quite a move, actually.
- A (Dusling) I guess I'll defer. You know, we're relying on their expertise in that manner. And, based on, you know, the equipment warranties and everything that are being provided, I don't think the Company, you know, thought 40 years was unrealistic, when you're starting with a 25-year warranty for a PV module. I mean, I think we would all expect those to last longer than their warranty period. You know, and most of the other

[WITNESS PANEL: Sprague, Dusling, Francoeur,

- 1 components are, you know, steel and transformers,
- 2 you know, we would expect to last 40 years as
- 3 well.
- 4 Q Would you agree that the Project life is a
- 5 performance characteristic?
- 6 A (Dusling) Yes, I think so.
- 7 Q You actually listed it, so --
- 8 A (Dusling) Yes.
- 9 Q And, so, where I'm going is, have you looked at
- 10 what the benefit-to-cost ratio would be if you
- 11 had the Project life assumed at 30, ceteris
- 12 paribus, everything else being held constant?
- 13 A (Francoeur) Just to make sure I understand what
- you're asking is, what would the net present
- value or benefit-cost ratio change to assuming a
- 30-year life opposed to a 40-year life?
- 17 Q Uh-huh.
- 18 A (Francoeur) Okay. On Hearing Exhibit -- on
- 19 Hearing Exhibit 5, Bates Page 039, --
- 20 Q If you just bear with me. Can you repeat the
- 21 page number again? Sorry.
- 22 A (Francoeur) Hearing Exhibit 5, Bates Page 039.
- And, on this page, we're looking at Table 9.
- 24 Q And I'm essentially looking at Exhibit 4., it's

#### [WITNESS PANEL: Sprague, Dusling, Francoeur,

the same thing. And we won't talk about the numbers. That's all. Yes, go ahead.

A (Francoeur) Yes.

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like.

- Q They are public numbers. So, that's true. Yes.
  - A (Francoeur) On Table 9, we provided this as sort of an illustrative change from the "as filed" benefit-cost ratio model to the one included in the supplemental filing. There's some of these that are a little bit difficult to quantify, given that the scope of the Project changed, as you pointed out, from 30 to 40 years, and the change in the Investment Tax Credit to the Production Tax Credit. But we did try to shed some light on what the net present value and BCR changes were, specific to some of the design characteristics and tax credits and things of the

So, included in that table is the "Longer Facility Life", which I believe is the third column down, which shows that the net present value increased approximately 0.8 million, and the benefit-cost ratio increased 0.5, as a result of moving the Project's life from 30 to 40 years.

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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- Q Yes. But, overall, if I wanted to get a sense of -- there are some base assumptions you're making about the other variables. And then, you also allowing Monte Carlo to pick up the variability there. If you simply fixed the Project life to be 30 years, I get some sense out of it, but I don't have the answer. Would you think that's a correct characterization? I wouldn't really know.
- A (Francoeur) It's definitely not -- I'm struggling to understand that.
  - So, when you do the Monte Carlo, there are some input variables that you are considering that you will subject to variations. And you assign different distributions to them, and you let the -- I think you said "@Risk", it does the simulation, and it will pick up a lot of things, you know, like differently. So, for example, cap -- you know, it must be somewhere in another table, one of the attributes, it can move, right, in this, in the tornado that you showed, so it can keep moving. But that is all being done by assuming that the Project like this, 40 years?

    (Francoeur) Correct. The simulation analysis did

### [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

not include the expected life as a variable that could change. And I think one of the reasons we did that is because the increase in capital costs, you know, I think speaks to the quality of the materials that lends itself to that higher asset life.

But, to answer your question, no, that was not included in the sensitivity analysis.

- So, essentially, you did not do it, and you're sort of giving a reason that -- one of the reasons, that may be the capital costs are already, you know. But it almost feels like, to me, that it might be helpful to have a stress test on even that variable. Okay. And --
- A (Francoeur) Let me briefly confer with my colleague.
- 17 Q Yes.

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[Witness Francoeur and Witness Sprague conferring.]

#### BY THE WITNESS:

A (Francoeur) To reiterate what Table 9 is telling us, which maybe I didn't do the best job explaining, I think what we could infer from this table is that the supplemental benefit-cost model

# [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

included a net present value of 2.5 million.

Then, from a high level, we could assume that, if we were to remodel this, holding all else equal, except the 30-year facility life, that the net present value would decrease approximately 0.8 million, which would result in an adjusted net

If that helps at all?

present value of 1.7 million.

#### BY CMSR. CHATTOPADHYAY:

- Q I think it sort of does, but I'm not a statistician. So, I'm sort of thinking in terms of, when you do a Monte Carlo, that variable being --
- 14 A (Diggins) Yes, maybe I can try a little bit.
- 15 O Yes.

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16 (Diggins) So, when I look at this table, you 17 know, I think it's really trying to walk us 18 through the original model, the 30-year model, to 19 the updated model. And what specific individual 20 components changed and how they affected the 21 modeling. So that, again, what Andre has 2.2 mentioned, the increased life really increased 23 the net benefit value by the \$0.8 million.

I would take that as, it's not a

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

1 perfect one-for-one isolation, but that was our 2. best attempt to do, I think, what you're asking 3 him to do, is just walk us -- what changed from 4 the 30-year model to the 40-year model. 5 So, it's like going from, yes, from 30 to 40, 6 that's the --7 Α (Diggins) That would be --8 -- the increment that you were looking at? 9 (Diggins) Yes. 10 But what I'm saying is -- I understand that. 11 That's useful. But I'm also saying is, when you 12 do a stress test on the number of years, the 1.3 Project life, you might get a -- and I can't 14 really visualize how that would play out, but 15 that's the point I'm making as an additional 16 comment.

17 A (Diggins) Okay.

18 Q So, that's a different question.

19 A (Diggins) Okay.

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A (Sprague) I do think you're right that, if we were to add this as another risk in that analysis, that it would have an impact. But, from the 0.8 million, I think the -- I think that 0.8 million is representative of the window that

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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we would be in. Will it be a little higher or a little lower? Probably. But that 0.8 million is a good representation of where we would be if we stuck -- if we were a 30-year life.

- Q Okay. Let's move on to something else. Is the decommissioning cost, is that part of the cost of removal, or is it separately accounted for?
- A (Francoeur) The decommissioning cost is included to be collected in the revenue requirement every year while the Project is in service. I'm not a depreciation witness necessarily, but I do think that we would expect that the decommissioning expense would be calculated, if it's treated like most utility plant, to be included in a slightly higher depreciation rate to account for the cost of removal.
- And, obviously, I'm not a depreciation expert,
  nor am I an accountant. So, it's like, maybe you
  don't have the answer here, but I'm curious
  whether that is, what you just described, is
  being handled in the modeling?
- A (Francoeur) So, we're not treating the decommissioning expense as if it's embedded in depreciation. So, we're just fully depreciating

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the asset at cost. But we've included a separate line item for -- more so for visibility and transparency to isolate decommissioning expense, and which is typical for a financial modeling of this nature, I believe.

- Q Another question I have is, will there be any book value left after 40 years? Have you looked at that?
- A (Francoeur) The primary book value that will be left would be specific to land improvements and land acquisition costs, which won't depreciate.
- Q Have you internalized that in the analysis here?
- A (Francoeur) Can you elaborate on "internalized"?
- Q In sort of does that, if at all it does matter,
  I'm not sure whether it does, but I'm just
  asking, whether that has a bearing on the
- benefit-to-cost ratios that you're --
  - A (Francoeur) The existing net book value of land improvements and land acquisition don't have a bearing, per se, on the benefit-cost ratio, other than that customers will have to provide the rate of return on that net book value throughout the life of the Project.

So, customers are going to make

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins Coulding Pentz & Piercel 1 investors whole for the investment in the land 2. that the solar facility will sit on for the 3 40-year period. 4 Beyond 40 years? 5 (Francoeur) At Year 41 -- let me briefly confer 6 with my colleagues on that one. 7 Q Okay. 8 [Witness Francoeur, Witness Sprague, 9 and Witness Dusling conferring.] 10 BY THE WITNESS: 11 (Francoeur) So, to answer as succinctly as I 12 hopefully can, that, in Year 41, when the facility is fully decommissioned, and there's 1.3 this net book value that the Company has for land 14 15 improvements and land acquisition, that existing 16 net book value has no impact on the benefit-cost 17 ratio results. 18 BY CMSR. CHATTOPADHYAY: 19 Okay. And I'm struggling whether that should be 20 somehow internalized. So, let's -- I'll just 21 stop there. That's fair. 2.2 This is the last question. It's an

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[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel 1 have to rack my brain. 2 (Dusling) The "racking equipment" is the steel 3 components that support the PV modules 4 themselves. 5 Uh-huh. 6 (Dusling) So, it's the steel structures that come 7 out of the ground and that the modules are 8 mounted to, and it also includes, in this case, the motor and assembly that makes them turn. 9 So, it's like a standard equipment everywhere? 10 11 I'm just curious what it is? 12 (Dusling) I will say every PV facility has them. 1.3 I think they are different, depending on the 14 manufacturer and the style selected. And their 15 installation and how they're designed is 16 different, depending on what's selected. 17 But, yes. There's some sort of racking 18 associated with every PV, ground-mounted PV 19 installation. 20 And the bidders responded by giving you a sense 21 of the project life of those, right?

Q Has the Company done any research on, you know, what they are usually, or you're just totally

(Dusling) Correct. Yes.

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# [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

dependent on -- depended the answer on the bidders?

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A (Dusling) In this case, the ones that are being proposed for this facility are just, you know, steel posts that are screw-anchored into the ground, the same steel that we use for substation steel or anchors in the ground, and we would typically expect to have a 40-year life plus out of those.

The motors themselves, we're relying on the warranty information. But that's, you know, one of the big reasons why we added that half a percent replacement in the first 10 years after the warranty expires, and then the full 1 percent in the final years. So, that's the reasoning behind that.

CMSR. CHATTOPADHYAY: Thank you. I will -- I usually don't do this, but I will commend, you know, the supplemental testimony that went into the risk analysis, that was extremely helpful. So, thank you for that.

That's all.

CHAIRMAN GOLDNER: Thank you. Maybe I'll just go for five minutes, and then we'll

## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

1 take a break.

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#### BY CHAIRMAN GOLDNER:

I also have a few questions on the 30- to 40-year life. And I know that -- I know that ReVision represented to you that 40 years was reasonable.

But 40 years ago we were in the first Reagan Administration. So, I'm sort of wondering how they know about 40 years?

I assume they do some kind of accelerated life test or they've got some data that they shared with you that -- that gave you confidence in the 40 years. I'd just like the Company to comment.

A (Dusling) Yes. I think, in general, based on our discussions with them, you know, to date, you know, the facilities that they maintained and have installed, you know, they have indicated they have had to replace less than, you know, a tenth of a percent of what's out there for modules, racking equipment. You know, they have also seen that the inverters typically last through what their anticipated life is.

You know, from our perspective, I think, you know, on our assets, we typically

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

expect them to last longer than their warranty periods as well. And, you know, when we talked about, you know, future O&M replacements, I think going to that, from that 30- to 40-year life, is also another reason why we added some of that additional O&M going forward, the need to replace some of the motors, additional modules, throughout the life, to kind of extend that life period from 30 to 40 years.

Yes. I'm just -- I'm not able to understand

ReVision's representations. So that I know they explained that to you, and I know that, in the early life, they didn't -- none of these solar arrays were installed in 1983, I'm sure. So, they're making representations to you, you've trusted those representations. And I'm just trying to understand if they've shared any data with you on accelerated life test, or something else that they have done to give you confidence, not in Year 1 or Year 5 or Year 10, but in Year 30 or Year 40?

A (Francoeur) No, I have not seen any accelerated life tests or anything like that.

Q Okay.

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## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

A (Francoeur) No.

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2 Q Hmm. That may be something to -- something to study.

4 I'm also interested in the 5 physical disposal of the solar arrays. So, some 6 of them stop working in Year, you know, 5 or 10 7 or 15 or 20, that's not going to be very many. 8 But, in Year 40, you'll throw them all away. 9 do you physically dispose of a solar array? 10 that been sorted out, heavy metals and so forth? 11 (Dusling) To the best of my knowledge, I think 12 they would scrap any of the metals. And I think 13 they do salvage a lot of the solar panel 14 components and recondition them in some cases. Has ReVision given you any information or made 15 0 16 any representations about how they would dispose 17 of the arrays, I mean, specifically? I 18 understand, in general, they would try to recover 19 heavy metals and do those kinds of things, and 20 throw the rest in the landfill. But I'm just

23 A (Dusling) Not that I recall, no.

specifics on that?

24 Q Okay. You mentioned before, I think, that New

trying to understand if they have given you any

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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Hampshire Department of Environmental Services

have -- you've been in contact with them. Have

you discussed with them the disposal plans

specifically at this point?

- A (Dusling) No. They have not asked anything regarding that at this point.
- Q Okay. Okay. And I know -- I know this isn't a nuclear plant. But, in nuclear plants, often there's a bond, and there's some money that's put away in that sort of regard.

Can you maybe walk me through the thought process, in terms of the decommissioning? I realize it's not as expensive as a nuclear plant. You're taking some, I think, accruals as you go. But, just maybe from a financial perspective, if you could walk me through that, I would appreciate it?

A (Francoeur) For this asset, as you allude to,
it's not significant enough to require some
retirement fund. But the cost of removal or the
net salvage value, I do believe would be included
in the depreciation rate. So, essentially,
customers would finance the removal and
decommissioning cost over the life of the

[WITNESS PANEL: Sprague, Dusling, Francoeur,

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Diggins, Goulding, Pentz & Piercel
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         Project.
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         Okay. Okay. And then, maybe just one last
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         question before the break. I'm also following up
         on Commissioner Chattopadhyay's question on the
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         land value.
                    So, at the end of all this, you've
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         decommissioned it, you've got, what is it, 20
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         something acres, I think, of land. That land has
         some value. Does that accrue to the Company's
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         shareholders or how is that, you know, accounted
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         for?
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         (Francoeur) Let me briefly confer with my
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         colleague.
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                    [Witness Francoeur and Witness Diggins
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                    conferring.]
16
    BY THE WITNESS:
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         (Francoeur) We haven't proposed how we're going
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         to handle the net book value of the land upon
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         decommissioning of the solar facility, and aren't
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         necessarily prepared to answer how we might
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         propose that in the future, as of today.
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                    CHAIRMAN GOLDNER: Okay. So, let's
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         take a fifteen-minute break.
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                    If you could, as a Company, further
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### [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

confer on that question. We don't -- we prefer not to leave hearings with record requests and those kind of things. So, it's best to maybe confer and sort things out before we leave today. So, if you could confer, I'd appreciate it.

Let's return at 10:45. Thank you.

(Recess taken at 10:31 a.m., and the hearing resumed at 10:49 a.m.)

CHAIRMAN GOLDNER: Okay. We'll go back

on the record.

#### BY CHAIRMAN GOLDNER:

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- Q And I think we left it with the question on land.
- 13 A (Francoeur) So, we did briefly confer about this
  14 issue. And we have a couple points to make.

The first is, it's unclear now what we would do with this site 40 years from now. The options could be to decommission the existing solar facility and lay down another one, other utility purposes, or a sale.

So, in the event of a sale, there would be a potential gain or loss on the sale. And we would, for regulatory ratemaking purposes, treat that gain or sale subject to whatever the Commission or legal precedent is at that time.

# [WITNESS PANEL: Sprague, Dusling, Francoeur,

Q Okay. And using today's rules, how would it be treated? So, let's say you sold the land in 40 years, using today's rules, for \$10 million. How would that 10 million be treated?

[Witness Francoeur and Witness Diggins conferring dig.]

#### BY THE WITNESS:

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A (Diggins) As we understand the legal rules right now, that it is the shareholders' risk for any gain or loss on the sale of a piece of property, since that property isn't depreciated, and ratepayers aren't actually funding -- or, funding the property. When there is a book gain or loss on that sale, it is -- it is returned to shareholders.

#### BY CHAIRMAN GOLDNER:

Q Okay. Okay, thank you for that clarification.

A follow-up question relative to stranded costs. If we go to, I think it's Exhibit 4 or 5, it's not redacted, Bates Page 155, I'll give you a moment to get there.

So, if we look at items like "PV Modules" and "Racking Equipment" that are being installed in years -- in the late years, let's

### [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

say, 31 through 40 on this page, wouldn't those become stranded costs at the end, because you're installing something late in its life, it's not fully depreciated, so then it becomes stranded, correct?

[Witness Francoeur and Witness Diggins conferring.]

#### BY THE WITNESS:

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A (Francoeur) Based on our discussion and understanding is it would likely -- any undepreciated cost as the asset life near an end would likely be picked up as some amortization of an asset during a depreciation study, you know, during the pendency of a rate case.

#### BY CHAIRMAN GOLDNER:

- Q Okay. And then, how would it be treated in the rate case?
- A (Francoeur) I think, again, as a non-depreciation witness, it would be potentially considered a depreciation reserve imbalance, which would be treated as a regulatory asset for recovery.
- Q Okay. Does anyone else have any comments on that topic?
- 24 A (Goulding) I am not a depreciation witness. But

# [WITNESS PANEL: Sprague, Dusling, Francoeur,

that's how I would view it, too. It would roll into the buckets that would be reviewed as part of the depreciation study. And, as Andre -- as Mr. Francoeur said, it could be picked up as part of the depreciation reserve imbalance.

Q Okay. Happily, for all of us, I am also not a depreciation expert.

[Laughter.]

#### BY CHAIRMAN GOLDNER:

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- Q So, can you explain to me how that stays out of the "stranded cost" category, or could stay out of the "stranded cost" category?
- A (Goulding) So, you've -- during normal ratemaking, you do have assets that are retired prior to them being fully depreciated, and this would be a similar type asset, if it got to the ends of its -- at the end of the life of the Project, and the asset had not been fully depreciated or sold for some kind of salvage value, it would fall into a "retirement" category, as the solar facility is shut down and decommissioned.
- Q Okay. Okay. Thank you. That's helpful.
  Okay. Let's go to Exhibit 4, Bates

[WITNESS PANEL: Sprague, Dusling, Francoeur,

Page 044. There's a nice discussion there on "construction and cost risk". And, so, I'd like to understand if you have any cost containment structures in your contract with ReVision, or anything else, that controls the forecasted cost?

- A (Dusling) So, I don't think there's anything explicit in our contract with ReVision. Our expectation is, you know, if the pricing were to change when we make formal purchase orders, at that point they would become fixed, and we would continue to make sure that the Project is still economically feasible before moving forward with those purchases.
- Q Okay. So, the risk would really be late in the process, you're 5, you're 10, you're \$15 million, or \$12 million in, and there's a cost overrun or some kind of issue, you would be at risk there, because you might have a cost overrun, and you're already deep into the Project?
- A (Dusling) Yes, I would say that's where the predominant risk is. You know, all the major equipment and everything will be fixed pricing at the time of purchase.
- Q Okay. Thank you.

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### [WITNESS PANEL: Sprague, Dusling, Francoeur,

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Okay. So, I have some questions relative to the PTC, the federal government credit, and then the RECs. Can -- is there anywhere in the filing that quantifies the present value of those government credits, whether it be from the federal government or the state government? Is there a present value calculation for those, those credits?

And, if not, I'll ask for the Company to resolve those calculations at lunchtime, just so that we don't leave the proceeding without the numbers. And it's okay if you don't have them now, but I'd like to understand what the present value is of the credits, and how that would affect the NPV if those weren't there?

- (Francoeur) Top of mind, I can't about the -- I can't think of where the net present value would be in the record. But I can certainly calculate that during the lunch break.
- Q Thank you. Yes. That would be very helpful.

  I'll just mark it accordingly.

There's a discussion, I have it in my notes at -- in Exhibit 7, Bates 008, but anyone can answer the question. And I guess I'll start

## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

with the Company.

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There's a discussion of adjacent land for a potential energy storage. Can the Company elaborate on what it has in mind there?

- A (Dusling) I don't think we fully know at this stage. We do know the facility we're building, we're going to try to reserve enough space and design it in a way that energy storage could be integrated in the future. We just want to make sure we're not doing anything that would cause us any unforeseen difficulty integrating energy storage down the road.
- I can't help but ask, in terms of how that would work. I guess you would have some land available for the storage facility. I guess you would be using, you don't know, but some kind of large lithium battery. You would transfer the energy from the solar arrays to the battery DC, --
- A (Dusling) Yes.
- Q -- and then you would need another set of inverters, in case you wanted to use all the power at the same time. Am I getting that right, more or less?
- 24 A (Dusling) I think that would -- I think we'd have

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[WITNESS PANEL: Sprague, Dusling, Francoeur,

to review the statute a little bit. I think our initial thought would be they would be integrated on the DC side of the inverters, and use those same inverters to export the energy. So, the facility would not be exporting more than the 4.875 megawatts of nameplate inverter capacity.

- Ah. And that's a function of the statute, not an engineering function. If it was an engineering function, you might add inverters. But, because of the statue, you would have to keep it under 5, is that right?
- A (Dusling) That's my understanding, yes.
  - Q Okay. That's very helpful. Thank you.

I've seen a lot of solar arrays in the desert Southwest, just driving along, you see a lot of them; not as many in New England, snow and ice and these kinds of things. What's the Company's process? How do you deal with snow and ice on the arrays? Do you have a company that comes and cleans them off? How do you do that? (Dusling) So, in this case, these being single-axis trackers, when they have -- there's weather stations installed on the site. Yes.

So, when they see more than I think it's five or

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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six inches of snow, they rotate so they're fully 60 degrees inverted, so the ice and snow would essentially slide off of them. And then, once the snow melt gets beyond the level in which they can rotate again, they will automatically start rotating again.

Q Interesting. Thank you. That's very helpful.

And, for me, it's been, you know, 30 years since Electrical Engineering class. So, I need a refresher on how a string inverter works, relative to a central inverter, and what the advantages are. Can you maybe give an executive summary for the layperson, in terms of your decision to go from a central inverter to a string inverter, and the benefits of that?

It wasn't -- your testimony was excellent, but it's not that clear to a mechanical engineer.

(Dusling) Right. So, the central inverter is, you know, typically, for a facility of this size, it would be one, two, maybe three large inverters that, you know, if one had to be taken down for maintenance, or one were to be replaced, you were going to take down a half or a third of your

### [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

production.

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Individually, they're cheaper. They're easier to move around and install. And, in those cases, if we were to have a failure of one inverter, you just take that one inverter off line. So, it's only 100 -- I think it's 125 watts that's out of service, kW out of service, instead of a third of the production of the facility.

- Q I see. So, the string inverters, I was, you know, picturing something that was stepping the voltage through two or three inverters, but that's not what it's doing. It's just -- these are just -- you're just buying more inverters to do the same function?
- A (Dusling) Right. Think of it as, you know, you might have two or three transformers feeding them all, opposed to one large transformer; the same type of scenario with inverters.
- Q Okay. Thank you. Thank you. Very helpful.

Okay. Before I go to my last series of questions, just one on Exhibit 4, Page 54. Let me get there, the Monte Carlo. Okay. And, actually, I'll start a little higher than that.

## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

I'll start on Page 52.

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So, in the -- I notice, I might have this incorrect, but, in the stress test, you used the initial depreciable capital cost, and worked on that in the stress test. But I don't think it was in your Monte Carlo. Is there a reason that it was excluded or am I incorrect that it was excluded?

- A (Francoeur) I do believe the depreciable cost was included as one of the key variables. And that's on -- I think on that same Hearing Exhibit 4, Bates Page 059, and a number of those pages.
- Q Fifty-nine. Can you point to which line? I couldn't -- because I'm talking about here the 13.9 million going to 15.something million capital cost.
- A (Francoeur) Yes. So, for this specific variable, depreciable capital cost, the base case input, if you will, was 100 percent of our assumed and as-modeled capital costs. And the downside, reducing capital costs, was set at 95 percent, so, a five percent savings. And then, cost overruns were set to 115 percent.

So, the Monte Carlo did allow for

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

changes in the depreciable cost using a triangular distribution.

- Q Okay. Okay. Thank you. And then, you have this on the graph on Page 57, it's probably on the other one, too, 56 or 57, a red bar at the top that shows that the probability of let's call it "success" here, having a positive NPV, is 84.3 percent. That's correct?
- A (Francoeur) That's correct.

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Q Okay. Okay. And, yes, I'll mirror my fellow Commissioners' compliments. I think the analysis, with both the stress test and, in particular, the Monte Carlo is excellent. And I think my compliments on this work. This was extremely helpful and well done. So, thank you.

Okay. Let's go, I just have one last series of questions. So, I'd like to move to the shareholder point of view. We talked about it a little bit earlier, with respect to the land.

But I'd like to just hear some general comments on why shareholders support the Project, and, just at a high level, what do they get out of it?

[Witness Francoeur and Witness Diggins conferring.]

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

#### BY THE WITNESS:

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A (Diggins) Yes. The Company, as well as its shareholders, looking at this Project really as somewhat of a typical utility asset construction project, that is allowed to earn its normal cost of capital/rate base return.

You know, we are also, you know, in an environment where there are environmental, social, economic attributes that this Project has additional advantages to, especially the environmental side of things. You know, you've heard about the indirect benefits, as well as direct benefits.

So, the Company is also -- has its own program of environmental reduction of greenhouse gas emission targets and things like that. So, endeavoring on a project that not only can provide a return to shareholders, that the return that is expected, I guess, of shareholders, but also provides additional benefits, is something of great value to the Company.

#### BY CHAIRMAN GOLDNER:

Q Okay. Thank you. And I'll focus in a little bit on the financial benefits, and I'm using, I hope,

### [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

the right numbers here. I'm showing "13.9 million" on Exhibit 4, Bates 052, in the capital cost, it gets a rate of return. And, if I have the wrong number, please let me know.

And, so, from a shareholder perspective, and I'll just say that, you know, you're 50/50 debt/equity, right? And, so, your shareholders get a return on their 50 percent of 9.something. So, to your point, it's sort of a conventional utility investment, where the shareholders put up 14 million up front, and they get a return on that investment per your weighted average cost of capital, but, specifically, the return on equity from a shareholder point of view.

- A (Diggins) Correct.
- 17 Q That's a fair summary?
- 18 A (Diggins) Yes.

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Q Okay. So, when I look at the modeling that you've done, and I think about this, what's in your control and what's not in your control, you don't control the price of electricity, I'm pretty sure. So, that's not in your control.

There's a lot of the factors that you've laid in

[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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here that really aren't under your control. The thing that is under your control is how much the facility costs to implement. And, of course, there is the attribute or aspect of it that, if you end up spending more than forecasted, your shareholders get a rate of return on that, and that eats into the NPV of the Project. So, it's sort of a strange attribute to it. Like, in other words, the Company is rewarded, and I'm not suggesting you would do this purposefully, but the Company is rewarded for spending more than is forecasted, because you get a rate of return on that. It's just an attribute.

So, my question for the Company would be, would the Company be open to a spending cap on something that you control, in terms of a piece of keeping the costs under control, or keeping the NPV positive on this Project?

(Diggins) I do believe the Company has every indication of moving -- only moving forward with the Project that would be NPV positive, providing direct benefits to customers.

As Jake mentioned before, as we get further and further down this Project, a big bulk

### [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

of these costs are going to be known and fixed.

I mean, obviously, there are some outliers out
there. But, you know, we will be doing the best
we can to kind of maintain and contain those
costs within our, you know, our existing forecast
that we have right now.

And, so, we will continue to monitor and analyze costs.

Q Yes.

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A (Sprague) So, one of the reasons why we've taken the approach that we've taken here, with the "two-stage approval process", I'll call it, is, one, we think we brought forth a project that is in the best interest of the customers, based upon all the information that we have in front of us.

As we've shown, there are a lot of variables to it. Over the next couple of years, there will be a lot of variables to it. But the second approval, the Company still runs the risk of prudence. And that's why we have that second review. No different than any other capital improvement that we do. It is, as long as the Project is implemented prudently, and executed within the reasonableness of our control, then,

## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

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generally, the Commission sees that that was, you know, prudently managed.

I think we would say, in this case, this Project should be handled in a similar manner. That, rather than set a hard-and-fast cap at this point in time is, in that evaluation phase or that prudence phase, we'll have even more information that will — that would feed into the cost-benefit of this. It's not just the cost. There are portions of the costs we don't control; there are portions of the costs we do control. But there is also a lot that we don't have control of.

Overall, we think we've put forth a beneficial project to the customers, to the Company itself. So, at this point in time, I would say that, that as opposed to the cap, I would say we would favor the review of prudence at the time that we come in to seek recovery.

CHAIRMAN GOLDNER: And the challenge here, from a regulator perspective, is that, if you look at what the Company is investing in, and from a shareholder point of view, the shareholder has, subject to the prudence review,

## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

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post-prudence review, almost a guaranteed rate of return, right? It's a pretty safe return as returns go. And, of course, the Company gets 9.something percent return on equity for that investment that's now pretty safe. So, you know, that's kind of one piece of it.

From a ratepayer point of view,
there's, and the Finance team can correct me if I
get this wrong, but that 2.5 positive NPV accrues
to the ratepayer, right? So, the ratepayer
benefits if you execute the plan as you've
outlined.

And then, I'm looking again at the -- at your modeling. And it shows, you know, again, an 84 percent chance of a positive NPV, but, you know, also a 16 percent chance of a negative NPV.

And, so, from a regulation perspective, you struggle with "Okay, if Unitil executes this plan, it looks really good. If Unitil doesn't execute, something goes awry, then it looks really bad." So, that's the concept of a cap, to give some confidence that we'll be able to stay in the positive zone. So, that's the reason I asked the question.

### [WITNESS PANEL: Sprague, Dusling, Francoeur,

And I would like to hear from the other parties in closing, in particular, the Department of Energy, but also the OCA and Clean Energy New Hampshire, if that's something that they would advise for or against, in terms of some kind of a spending cap.

Okay. I'll turn to my fellow

Commissioners, to see if there is anything they
would like to follow up on?

Commissioner Chattopadhyay.

CMSR. CHATTOPADHYAY: I do.

#### BY CMSR. CHATTOPADHYAY:

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So, let's go back to the discussion about

"stranded cost". So, in a scenario where you are
replacing equipment, and by the end of the
overall Project, the end of the 40th year or 41st
year, you no longer -- you still have that
equipment not fully depreciated. So, and, you
know, we were -- so, you were talking about that
scenario.

Does the modeling take account of the stranded cost in the benefit-to-cost analysis?

(Francoeur) The financial model does not account for the recovery of any undepreciated plant.

### Diggins, Goulding, Pentz & Piercel 1 Is there a way to do that, like some sort of a 2. proxy for it? 3 And maybe the needle doesn't move much, 4 but just out of curiosity. 5 (Francoeur) That's probably something that we 6 could calculate. And I think you're probably 7 right, that, in Year 40, on a Discounted Cash 8 Flow basis, it's probably not moving the needle 9 too, too much. 10 CMSR. CHATTOPADHYAY: Thank you. 11 CHAIRMAN GOLDNER: Okay. So, that 12 completes the Commissioner questioning period. 1.3 And we'll move to Unitil redirect, if 14 any? MR. CAMPBELL: Could I have a ten to 15 16 fifteen-minute break just to confer with my 17 colleagues on that? 18 CHAIRMAN GOLDNER: Of course. Let's 19 take a break from, it's 11:15 now, we'll take a 20 break till 11:30, and resume with Unitil 21 redirect. 2.2 MR. CAMPBELL: Thank you. (Recess taken at 11:15 a.m., and the 23 24 hearing resumed at 11:35 a.m.)

[WITNESS PANEL: Sprague, Dusling, Francoeur,

# [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

CHAIRMAN GOLDNER: Okay. We'll go back
on the record with any Unitil redirect.

MR. CAMPBELL: Yes. And I do have one preliminary matter, if that's okay?

Mr. Francoeur has had an opportunity to calculate the present value of the PTC credit.

He can give you that result now, if you'd like?

CHAIRMAN GOLDNER: Thank you. Perfect.

WITNESS FRANCOEUR: We calculate the present value of the Production Tax Credit and the tax gross-up associated with the flowback of that in the revenue requirement to be approximately \_\_\_\_\_.

CHAIRMAN GOLDNER: Thank you.

#### BY CHAIRMAN GOLDNER:

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And then, did you have one also for the RECs, and that is -- I think you've made the RECs a proprietary number, so that would be a confidential calculation. But we have no members of the public in the room. So, I think, as long as we highlight that as confidential, you can share the number.

MR. CAMPBELL: Although, pardon me,
Chair Goldner, not to single out Clean Energy New

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[WITNESS PANEL: Sprague, Dusling, Francoeur,
             Diggins, Goulding, Pentz & Piercel
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         Hampshire, but I don't think they're privy to the
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         confidential information.
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                   CHAIRMAN GOLDNER: Okay.
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                   MR. SKOGLUND: I can step out.
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                   CHAIRMAN GOLDNER: Thank you,
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         Mr. Skoglund.
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                    [Laughter.]
                   CHAIRMAN GOLDNER: I think you hurt his
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         feelings.
              [Beginning of CONFIDENTIAL Session]
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                   CHAIRMAN GOLDNER: Go ahead, please.
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                   WITNESS FRANCOEUR: Give us five
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         seconds.
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                   CHAIRMAN GOLDNER: Sure. Take your
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         time.
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                   WITNESS FRANCOEUR: Just to cross
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         reference.
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                   CHAIRMAN GOLDNER: Thank you. And,
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         when we finish, Mr. Iqbal, if you could grab
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         Mr. Skoglund, I'd appreciate it. Thank you.
    BY THE WITNESS:
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         (Francoeur) The present value of the REC to be
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         included in the direct customer benefits is
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         approximately _____.
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[WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

### 1 BY CHAIRMAN GOLDNER: 2 \_\_\_\_\_. And is that a complete assessment 3 of all of the federal and state subsidies? 4 there anything that would be a remainder for that 5 or is that a complete picture? 6 (Francoeur) The \_\_\_\_\_ reflects the REC II 7 rates, which I believe is in New Hampshire, and then the \_\_\_\_\_ is the Production Tax 8 Credits, which is a federal tax benefit. And, 9 10 right now, I can't think of any others. Okay. And I see a lot of heads nodding up and 11 Q 12 down. Okay. Very good. 1.3 So, can you remind me also what the PV 14 is of the Project? Was it 16.8? I don't have it 15 in front of me. 16 (Francoeur) The present value of the direct 17 customer benefits is 19.3 million. 18 19.3. So, if not for the credits, help me with Q 19 the math here, that would be 7.4. So, it would 20 be about -- 11.9 million would be the present 21 value, the gross present value of the Project, 2.2 net of the tax benefits? 23 In other words -- let me do it differently. So, the PV of the Project today is 24

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[WITNESS PANEL: Sprague, Dusling, Francoeur,
             Diggins, Goulding, Pentz & Piercel
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         plus 2.5. And, but for the federal and state tax
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         credits, the net present value of the Project
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         would be minus 4.9, correct?
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         (Francoeur) I want to clarify that I don't think
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         the Renewable Energy Credits are a tax credit.
 6
         The only tax credit are specific to the
 7
         Production Tax Credit.
 8
         Thank you. No, thank you for the clarification.
    Q
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         I'm just trying to look at the subsidies that the
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         Company is receiving. And, if the subsidies
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         were, for whatever reason, not available, they
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         went away tomorrow, what would the NPV of the
1.3
         Project be?
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         (Francoeur) Okay.
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         I think the answer to that is minus 4.9 million,
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         but I'd like to verify that?
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         (Diggins) I mean, I'd have to say the level is
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         4.9 million.
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                    CHAIRMAN GOLDNER: Thank you. Okay.
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         So, negative 4.9.
                    Okay. Mr. Iqbal, if you could grab
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2.2
         Mr. Skoglund, I'd appreciate it. We'll just wait
         for Mr. Skoglund to return.
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24
                 [End of CONFIDENTIAL Session]
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## [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

1 [Short pause.]

CHAIRMAN GOLDNER: Okay. Thank you for the opportunity. Attorney Campbell, please proceed.

#### REDIRECT EXAMINATION

BY MR. CAMPBELL:

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- Q Mr. Dusling, the Commission asked you some questions about the assumed 40-year life of the Project. Do you recall that?
- A (Dusling) Yes, I do.
- 11 Q And does the Company plan to enter into an O&M
  12 agreement with ReVision Energy?
  - A (Dusling) Yes. At this stage, our plan is to enter into an O&M agreement with ReVision Energy that will include annual -- I mean, daily monitoring of the facility remotely. Anything that they seem out-of-the-ordinary, they would then investigate, either remotely or on-site, depending on what is needed. And that also includes a detailed 80-point annual inspection, along with, you know, other O&M associated items.
  - Q Thank you. And, in your view, does a robust O&M plan help ensure that the Project will operate for its projected design life?

[WITNESS PANEL: Sprague, Dusling, Francoeur,

(Dusling) Yes. The goal of that O&M plan is to 1 2 catch any anomalies early on, so it can be 3 repaired and, you know, not cause any other 4 issues throughout the facility. And our intent 5 would be that, you know, ReVision would continue 6 to perform those responsibilities throughout the 7 life of the Project. 8 And does the Company plan to maintain a stock of Q 9 spares for the Project? 10 (Dusling) Yes. At this stage, we plan to stock 11 spare modules, spare inverters, so we can 12 minimize downtime. Those would all be kept at 13 our Exeter, New Hampshire, Operations Center. 14 Thank you, Mr. Dusling. And, Mr. Francoeur, has Q 15 the Company included in its benefit-cost model 16 any costs for the replacement of equipment beyond 17 its warranty period? 18 (Francoeur) Yes. As a result of some of the Α 19 feedback from the intervenors, we added 20 maintenance, capital maintenance expense, to 21 occur after the warranty periods end, which 2.2 should support the design characteristics of the

And that estimated funding goes out through the

Project throughout the 40-year life.

23

# [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Piercel

1 40th year of the Project, is that correct?

A (Francoeur) That is correct.

1.3

2.2

- And, Mr. Francoeur, before the break, there was some questions from the Commission about the salvage value of the Project. Do you recall that?
  - A (Francoeur) The salvage value in the stranded costs?
    - Q Correct. Thank you for that clarification, the stranded cost.
    - A (Francoeur) Yes. And to elaborate a little bit on the stranded cost is, you know, first, those maintenance capital repairs we added was to add a degree of conservatism, and is done in a modeling perspective, which may not match reality from time to time. For example, in the 40th year, we may not spend 200,000 on new modules a month before the scheduled decommissioning of the solar facility.

However, in the event that we did continue to put new capital into the Project as we get closer to the point of decommissioning, it would likely have the impact of increasing the net salvage value of the Project, which would

# [WITNESS PANEL: Sprague, Dusling, Francoeur, Diggins, Goulding, Pentz & Pierce]

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1.3

2.2

lower the decommissioning expense, and help to offset any of that stranded cost.

And, if -- as the Project is currently modeled, we estimate that the present value of the stranded cost, again, in the supplemental benefit-cost ratio, would be approximately \$100,000 or less.

MR. CAMPBELL: Thank you,

Commissioners. That's all the Company has for redirect.

CHAIRMAN GOLDNER: Okay. Thank you very much.

At this time, we'll excuse the Company witnesses, and invite the DOE witness panel to take the stand to be sworn in by the court reporter.

And, please, a special thanks to your Monte Carlo simulation guy, whoever that is, please, donuts and bagels tomorrow. Or gal, whoever it was.

(Whereupon **Elizabeth R. Nixon** and **Mark P. Toscano** were duly sworn by the Court Reporter.)

CHAIRMAN GOLDNER: Thank you. We'll

#### [WITNESS PANEL: Nixon|Toscano]

```
1
         begin with Attorney Young, and any DOE direct.
 2
                    MR. YOUNG:
                                Thank you, Mr. Chairman.
 3
                    So, I have a series of questions,
 4
         first, I'd like to ask the witnesses. I think
 5
         I'd like to ask the questions once, and have the
 6
         two witnesses answer one after the other. I
 7
         think it's probably an efficient way to proceed.
 8
                    So, having said that, I think I'll
         start with the witness that's closest to me
 9
10
         answer first.
11
                   ELIZABETH R. NIXON, SWORN
12
                     MARK P. TOSCANO, SWORN
1.3
                       DIRECT EXAMINATION
14
    BY MR. YOUNG:
15
         So, the question to each of you, could you please
16
         identify yourself by stating your name, your
17
         employer, and your position please?
18
         (Nixon) My name is Elizabeth Nixon. I'm the
19
         Electric Director at the Department of Energy.
20
          (Toscano) My name is Mark Toscano. I am a
21
         Utility Analyst with the Department of Energy.
2.2
         And have you reviewed the Company's filing in
23
         this docket?
24
          (Nixon) Yes.
```

```
1
          (Toscano) Yes.
 2
         Thank you. And, looking at the document that has
 3
         been marked for identification purposes as
 4
          "Exhibit 7", and which is titled "New Hampshire
 5
         Department of Energy Testimony of Mark P. Toscano
 6
         and Elizabeth R. Nixon", did you assist in the
 7
         preparation of this joint testimony?
 8
          (Nixon) Yes.
 9
          (Toscano) Yes.
10
         And do you have any corrections or updates to
11
         make to the testimony at this time?
12
          (Nixon) I do not.
1.3
          (Toscano) No corrections.
14
         Great. And do each of the witnesses adopt the
15
          joint testimony as their sworn testimony today in
16
         this proceeding?
17
    Α
          (Nixon) Yes.
18
         (Toscano) I do.
19
                 Thank you. So, Mr. Toscano, turning to
         Great.
20
         Exhibit 7, specifically on Bates Page 007,
21
         Lines 5 to 8, there's a mention of how the
2.2
         Company took some of the Department's feedback
23
         from the technical sessions and incorporated the
24
         Department's suggestions into their assumptions
```

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1
         and evaluations of the final RFP and contractor
 2.
         selection. I believe that Commissioner Simpson
 3
         may have alluded to this earlier, and I believe
         Mr. Francoeur spoke to it. But could you briefly
 4
 5
         explain what the Department was focusing on here
 6
         maybe in a little more detail?
 7
    Α
         (Toscano) Certainly. So, the Department
 8
         submitted feedback, which included the bidding
 9
         information of the estimated output of the solar
10
         panels, in particular, over time; to also -- a
11
         suggestion to include some higher O&M costs,
12
         operations and maintenance costs, in particular,
1.3
         over time as time went on; and also to include --
14
         suggestions to include some vegetation management
15
         for things that grow underneath these solar
16
         panels; and to include an allowance, or some kind
17
         of allowances for capital renewal over time.
18
                 Thank you. And then, really, just one
    Q
         Great.
19
         final question for the two of you. Based on what
20
         you heard today, was there anything from that
         testimony that you would like to add?
21
2.2
         (Nixon) I have nothing.
23
          (Toscano) Nothing further to add.
24
                   MR. YOUNG:
                                Okay.
                                       Thank you.
                                                   And with
```

```
1
         that, these witnesses are now available for
 2.
         cross.
 3
                   CHAIRMAN GOLDNER: Okay. Thank you
 4
         very much. We'll move to Unitil for any
 5
         cross-examination?
 6
                   MR. CAMPBELL: The Company has no cross
 7
         for these witnesses. Thank you.
 8
                   CHAIRMAN GOLDNER: Thank you. And
 9
         Clean Energy New Hampshire?
10
                   MR. SKOGLUND: No questions. Thank
11
         you.
12
                   CHAIRMAN GOLDNER: Thank you. And the
1.3
         Office of the Consumer Advocate?
14
                   MR. CROUSE: No questions at this time.
15
         Thank you.
16
                   CHAIRMAN GOLDNER: Okay. Very good.
17
         We'll move to Commissioner questions, beginning
18
         with Commissioner Simpson.
19
                   CMSR. SIMPSON: Thank you, Mr.
20
         Chairman. Thank you both for being here today.
2.1
    BY CMSR. SIMPSON:
2.2
         Continuing on with respect to the question on
23
         direct, regarding your feedback pertaining to the
24
         RFP, Mr. Toscano, from your testimony, it appears
```

```
1
         that you have quite a bit of experience with
 2
         operations of energy facilities, is that correct?
 3
         (Toscano) Yes, it is.
 4
         And, in your opinion, what O&M activities do you
 5
         think are most critical for this type of
 6
         facility?
 7
    Α
         (Toscano) Regular maintenance, going out and
 8
         checking and making sure that the connections are
 9
         secure, make sure there's nothing growing
10
         underneath the panels that might interfere, and
11
         nature comes back, vines and trees -- trees grow.
12
         So, we were very pleased to see the inclusion of
1.3
         some vegetation management in that.
14
                    The other thing it includes, of course,
15
         any of the connections within, whether it be the
16
         inverters on the strings or the combiner box,
17
         depending on how it's laid out, those are all
18
         very important. And sometimes the panels get
19
         damage from like debris blowing on it, and things
20
         like that.
21
                    So that those are crucial for any
2.2
         facility. And I saw that up close. And I was
23
         very -- we were very pleased to see the Company
24
         come back and include all those things.
```

2.

1.3

2.2

Q We talked quite a bit about asset renewal replacements when we were asking the Company some questions.

What types of failures do you think are the most likely in these types of installations?

Do you think it's as simple as debris, you know, damaging a panel, or do you think there's other more electrically based issues that can arise, and that are likely?

A (Toscano) Inverters, typically, are the weak link on these. And it was great to see them got to the string-type inverter arrangement, so you don't have all your eggs in one basket, because they do fail. They have gotten substantially better over the years that I've been involved with them. And you can see that by the warranties being increased as time has gone on. But, typically, those are the weak links, and, again, the connections.

Damage to the panels, typically, is not a major problem, unless there are trees or some other things that may fall on them. Sometimes lightning strikes do take some pieces of equipment, but that could happen anywhere.

## [WITNESS PANEL: Nixon|Toscano]

But most of the time the landscaping, you get some rocks or somebody would run into it with some type of mowing machine or cutting machine. Those are the kinds of things that can happen. But those are fairly typical. Other than that, the panels themselves are pretty benign, and they usually don't have much of a problem. I heard some discussion on snow earlier, I'll just weigh in on that. The ones that I was familiar with and worked with were fixed panels, a little further south from here, but nonetheless, on very short order, when the Sun comes out, the snow is off the panels, not quite like on a residential-type arrangement. And do you think that the lifespan of 40-year system life, do you think that's realistic?

A (Toscano) I will readily admit that it's a -that's a long period of time, as everybody has
noticed and commented on. What we did was we did
a sensitivity analysis on the 30, when it was 30
years, and it still showed a benefit-cost ratio
of greater than one.

Q Uh-huh.

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1
          (Toscano) It drops, obviously. So, we're
 2
         comfortable with that. I can tell you that --
 3
         and I apologize if I'm speaking too fast. My
 4
         experience is 14 -- 13 years now into the ones
 5
         that I am familiar with, and really no -- hardly
 6
         any degradation at all, in terms of output, and
 7
         reliability is -- the capacity factor is
 8
         essentially the same as it was when it was new.
 9
                   So, for 40 years, sure, that's a bit of
10
         a stretch, but these numbers seem to work even at
11
              And, based on what we are seeing with the
12
         longer warranties and the Company -- and the
1.3
         particular solar modules in question here have a
14
         long warranty period. So, we don't have any
15
         concerns with that.
16
         And, in your experience, is it fairly typical
17
         that a utility like Unitil would outsource O&M
18
         through a contract at project development?
19
         (Toscano) Yes, very much so. In fact, more and
    Α
20
         more companies have been popping up, as you can
21
         appreciate, as these head to development.
22
         that is the smart way to go.
23
                  I mean, I think it gives me some
24
         reassurance with the developer being part of that
```

```
1
         long-term O&M, because it would seem to be that
 2.
         they would have some stake in the construction.
 3
         They're not just going to build it, and walk
 4
         away. They're going to be part of the long-term
 5
         reliable functioning of the system. Do you think
 6
         that's fair?
 7
    Α
         (Toscano) Yes, I do.
 8
         So, in your view, you feel that the O&M that's
 9
         included, the vegetation management, the capital
10
         renewal provisions, those are all reasonable and
11
         appropriate for the Project?
12
         (Toscano) Yes, they are.
1.3
         Okay. Thank you. More generally, again, without
14
         disclosing anything proprietary or confidential,
15
         could both of you explain your take on the RFP
16
         process that followed the RFI? I think,
17
         actually, two versions of requests for proposal,
18
         it sounds like. Do you think it was
19
         competitively procured? Do you think the bids
20
         that were produced from the market are
21
         competitive and reflective of current conditions?
2.2
    Α
         (Toscano) Yes, we do. It was -- very pleased to
23
         look at the process and how it went out, and,
24
         initially, with some very specific requirements,
```

```
1
         solicited capable people to do the work.
 2
         would also say that having a second iteration, if
         you will, or even third, I believe, in this
 3
 4
         case, --
 5
         Uh-huh.
 6
         (Toscano) -- was well done, because you could see
 7
         the results got better and more defined as time
 8
         went on. So, the short answer is "yes", we felt
 9
         that that was a good process.
10
         And, from your testimony, it sounds like some of
11
         the feedback that the DOE provided was received
12
         and responded to throughout that process?
1.3
         (Toscano) Yes, it was. And, as the Commission
14
         noted as well, we were very pleased to see the
15
         level of detail and rigor on the Monte Carlo
16
         analysis and the stress test. And that's not all
17
         that common on a project of this size.
18
         Something else that seemed somewhat novel is that
    Q
19
         this is a tracker system. I have seen some
20
         tracking systems in New Hampshire, I live close
21
         to one, that's quite a bit smaller than this
2.2
         proposal. In your experience, have you worked
23
         with tracking systems? I know they have been
24
         around for decades, but it's typically been fixed
```

```
1
         systems that we've seen over the last couple of
 2
         decades, in my experience. You know, do you have
 3
         any thoughts on the tracking technology and the
 4
         appropriateness in this application?
 5
         (Toscano) Yes, I do. So, when this -- when I
 6
         first saw this submission, my initial gut
 7
         reaction, I tend to be conservative approach and
 8
         a little cynical on mechanical things, especially
 9
         up in the Northeast, --
10
         You've got to watch the mechanical engineers.
11
         (Toscano) Indeed. And, in any case, so, I
12
         started to do some investigation. And, lo and
1.3
         behold, through colleagues and other folks, they
14
         have gotten much better over time. And, in fact,
15
         where I was, we had proposed and were going to
16
         build two-axis tracking. And I felt adamant at
17
         the time, because, first off, two-axis tracking
18
         is a whole nother story anyway. So, the
19
         single-axis is the preferred way to go. And it's
20
         a much simpler system, and the one proposed looks
         very robust. So, I have -- we have very little
21
2.2
         concern with regard to that. And plus, they did
23
         allow for maintaining, which was a big point that
24
         was discussed, was to allow it to be maintained
```

```
1
         as time went on.
 2
         And what are the maintenance activities that are
 3
         relevant for a tracking system?
 4
         (Toscano) Well, obviously, the sensing devices,
 5
         the thing that tell it what to and, you know,
 6
         when to do it. As well, in particular, in this
 7
         case, the motors and the racking equipment and,
 8
         you know, what it pivots on and those types of
 9
         things. This one, again, that they proposed, is
10
         a simpler design than some of the other ones that
11
         we have seen. So, we have a little more
12
         confidence that it will work. And I actually
1.3
         have very good, high confidence in it, based on
14
         some investigation.
15
         It sounds like this type of system takes inputs
    0
16
         and then makes a decision on how to pivot, as
17
         opposed to just being programmed for 365 days a
18
         year, and then pivoting, as it's known, you know,
19
         the solar reflection and angle, is that correct?
20
         (Toscano) I believe that will be the case.
21
         haven't seen that level of detail on this yet.
22
         But that is how it's done.
23
         Uh-huh.
                  Okay. And then, does the Department
24
         have any comments with respect to the Company
```

```
1
         using RECs generated from the system as an offset
 2.
         to its RPS obligations, as opposed to selling
 3
         them?
 4
                    It would seem to me that, if they own a
 5
         system that's producing RECs, those should be
 6
         just used as an offset, as opposed to going into
 7
         the market. But I'm very curious to hear your
 8
         perspective on that?
 9
         (Nixon) I think it makes since, as they proposed,
10
         and, as they mentioned today, if they don't need
11
         them, then they could sell them in the market.
12
         Uh-huh.
1.3
         (Nixon) I mean, as noted in their benefit-cost
14
         analysis, they have assumed a flat line. I mean,
15
         the price is so uncertain at this point. So, I
16
         think it's an appropriate estimation.
17
         And the process of offsetting --
18
         (Nixon) And the process, yes, as well. I mean,
19
         given today, I mean, and I have been out of this
20
         market for a little bit, but I think that the
21
         obligation is somewhat reduced in that class
         already. So, if they don't need them, they can
2.2
23
         sell them and benefit from it in that way as
24
         well.
```

```
1
         Do you know if these RECs could be certified in
 2.
         other states?
         (Nixon) I believe so.
 3
 4
         Okay. So, there could be other markets where
 5
         they could be monetized?
 6
         (Nixon) Yes. I believe that they could sell them
 7
         in Mass. as well, or other places in New England.
 8
         Okay. And then, Exhibit 8 is a letter in lieu of
 9
         a settlement. Can you just explain why we didn't
10
         receive a traditional settlement agreement, as
11
         opposed to this letter, what purpose that serves?
12
         (Nixon) We did discuss settlement, and then
1.3
         thought it was somewhat awkward to have a
14
         settlement that basically said "We all agree."
15
         So, the conclusion was to submit a letter saying
16
         that "We all agree."
17
         Okay. So, there's nothing that was in the
18
         Company's initial testimony and supplemental
19
         filings that caused a point of concern for, I
20
         quess, any of the signing parties to that letter,
21
         and it's just to indicate that the DOE supports
22
         what the Company has filed?
23
         (Nixon) Correct. I mean, as Mr. Toscano said, we
24
         had some, you know, wanted to see a few things,
```

```
1
         but those were addressed in the supplemental.
 2
         So, we support as proposed.
 3
    Q
         Okay. And then, Chairman Goldner asked about a
 4
         cap, in terms of a dollar amount. And the
 5
         Company indicated they prefer a traditional
 6
         prudence review.
 7
                   You know, as we look forward, it seems
 8
         that the analysis is very thorough from the
 9
         Company, reasonable assumptions. The question
10
         just exists that, in the future, if the Company
11
         were to go through this process, following
12
         Commission approval, and then the costs are
1.3
         significantly higher, do you have any thoughts on
14
         measures to mitigate ratepayer impact?
15
    Α
         (Nixon) We support the Company's proposal to do
16
         it in a two-stage approach. And believe that
17
         this one, the benefit-cost analysis, took into
18
         account good assumptions. And then, the second
19
         phase is the cost recovery portion. So, we
20
         believe that the second phase is when costs
21
         really should come into play. And, at that
2.2
         point, we could propose disallowance --
23
         recommendations for disallowances.
24
                   But, at this point, we don't support a
```

```
1
               Because, I mean, as the Company indicated,
 2.
         this is a "best estimate" of what's to come.
 3
         But, as we all know, the world at this point, the
 4
         supply chain issues and others have come about.
 5
         And, I mean, again, at the cost recovery stage,
 6
         then we would take into account prudency and just
 7
         and reasonableness in our recommendation for your
         determination.
 8
         And, in a future proceeding, DOE would audit
 9
    Q
10
         costs --
11
         (Nixon) Yes, we would do that. It would be a
12
         totally different proceeding, in our mind, that
1.3
         would be -- we'd do all that in that proceeding.
14
                    CMSR. SIMPSON: Okay. All right.
15
         Thank you.
16
                    I don't have any further questions for
17
         the DOE witnesses. Thank you.
18
                    CHAIRMAN GOLDNER: Thank you. We'll
19
         move to Commissioner Chattopadhyay.
20
                    CMSR. CHATTOPADHYAY: I think
21
         Commissioner Simpson picked up one of the
2.2
         questions I was going to ask about, and
23
         Mr. Toscano ended up providing the details on the
24
         30 compared to the 40 years issue.
```

# 1 BY CMSR. CHATTOPADHYAY: 2. One, you know, I know that this is -- that the 3 DOE essentially agrees with everything that the 4 Company has proposed here. Do you have any 5 thoughts on the issue of the indirect costs, and 6 then how the analysis was done? Do you have any 7 thoughts on, for example, the economic benefits, 8 they were measured as gross benefits? Do you 9 have any thoughts on whether it should be gross 10 or net? 11 (Nixon) I can start, and if Mr. Toscano has 12 anything to add or supplement. 1.3 I think that it's my understanding that 14 the indirect were considered separately. So 15 that, in the benefit-cost, those aren't even 16 taken into consideration. So, without those, the 17 benefit-cost ratio is greater than one. And, so, 18 we support that and recommend going forward on 19 that account. 20 I think the indirect benefits in and of 2.1 themselves can stand alone and just add to the 2.2 actual benefits. 23 I'll be honest, I am somewhat confused

as to what you mean by "net", because I'm not

24

```
sure what costs you would take into consideration
 1
 2.
         with those indirect. But maybe I'm just
 3
         misunderstanding your question.
 4
         I'm not -- the question isn't coming up in a
 5
                  I'm just, based on the study that the
 6
         Company provided, that Daymark conducted, there's
 7
         a discussion about economic benefits there, and
 8
         they clearly say it's "gross economic", it's
 9
         gross, it's not measured net. So, that's what I
10
         was trying to address.
11
                   And if you have any thoughts on it,
12
                If you don't, let me know.
1.3
         (Toscano) As someone who spent the good part of
14
         my career on the receiving end of some studies
15
         with regard to job creation and all these other
16
         things, it's a very gray area, as you know.
17
         There's such a variability in the set of
18
         assumptions. And I was very pleased, we were
19
         very pleased that this Project can stand on its
20
         own without those indirect benefits.
21
                   And the way I viewed it myself, and we
2.2
         discussed this, is that we just consider it
23
         "gravy". Whether how accurate it is is
24
         debatable, to your point. There's just so many
```

1 things that go into those assumptions that make 2. it difficult. 3 So, the short answer is, because it 4 stands on its own, we didn't really have any 5 major concerns. The Daymark study looked 6 reasonable, based on the ones that I've seen in 7 the past. You can take issue with anything, 8 discount factors, all these other things. But, 9 generally speaking, they touched upon all the 10 things that I would expect them to do. 11 CMSR. CHATTOPADHYAY: Thank you. 12 CHAIRMAN GOLDNER: All right. Just a 1.3 few questions and comments. 14 BY CHAIRMAN GOLDNER: 15

So, first, I'm just looking at your exhibit,
Page 11. And it's just a compliment on the
triangulation that you used when you looked at
the National Renewable Energy Laboratory's
information. You looked at the Long Island Solar
Farm. You compared that to the Company software,
and you sort of triangulated the answer. That
was very nice. So, my compliments on that
analysis.

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2.1

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A question that I have is relative to

1 these, the string inverters. I'm showing here a 2. 20-year lifespan, standard warranty period of 3 five years. And I'd just like to get the 4 Department's thoughts on the risk involved there? 5 Any time you have a 20-year lifespan and a 5-year 6 warranty, that's maybe a flag for concern. 7 Do you have any thoughts on how long 8 these string inverters would last, relative to 9 the warranty? 10 (Toscano) I believe they have an option for 11 another five years, --12 So, a ten-year. 1.3 (Toscano) -- which would probably make sense to 14 do. I believe that's intended to happen. 15 As I mentioned, the inverters are 16 the weakest, still to this day, are the weakest 17 link on these. But they have gotten much better. 18 Ten years is typically kind of the number that I 19 am familiar, where we would see failures by ten, 20 or before, and very rarely did we see them last 21 longer than that, in the early years. 2.2 But, because we've been observing, and 23 my counterparts in other places have been 24 observing, an increased quality and, you know,

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robustness of these, and less concern. And, in particular, when they went to the string inverter approach. Where, now, you know, you lose a small portion of the array output. You can go service it and get it done.

They did, as you know, they did add some, in the later years, they added some assumed replacement of these as they went on, and, hopefully, that will be the case.

So, I will say that I'm still a little cautious on that, I tend to be. I told you, I tend to be a little cynical and conservative on things. But I thought that this was done as well as one could do with something like this.

Yes. Okay. Very good. Thank you. And then, a question maybe for you, Ms. Nixon, following up on Commissioner Simpson's question.

So, just in turns of the prudency review and the disallowance process and this kind of thing, I'm familiar with disallowances coming from Audit. Audit takes a look at it, and they find some things, and there's some recommended disallowances.

Can you recall any disallowances not

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         coming from Audit, in your history at the
 2
         Commission or the Department?
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         (Nixon) The one that comes to mind immediately,
 4
         and I'm sure there's many others that we've
 5
         recommended, well, it was regarding their new
 6
         center. And I can't remember all the specifics,
 7
         but we did have some proposed disallowances
 8
         regarding that in our original testimony.
 9
                   But, I mean, that's basically our job,
10
         is to review these, and make sure that we agree
11
         with the cost recovery, and make our
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         recommendations. So, if there -- there are
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         others, just that nothing is coming to mind at
14
         the moment.
15
         Okay. Okay. But your -- the Department's
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         position would be to, of course, audit the
17
         Project, and look at those disallowances.
18
         then, separately from that, the Department would
19
         evaluate the Project itself, outside of Audit,
20
         and also potentially recommend disallowances.
21
         that a fair summary?
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    Α
         (Nixon) Correct. If we thought some process
23
         wasn't followed, or for whatever reasons that we
24
         didn't believe that it was -- should be
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1
         recovered, then we would proposed a disallowance,
 2.
         outside of Audit even.
 3
                   CHAIRMAN GOLDNER: Okay, thank
 4
         you.
 5
                   Okay. Very good. Are there any other
 6
         questions from the Commissioners?
 7
                   [Cmsr. Simpson indicating in the
 8
                   negative.]
 9
                   CMSR. CHATTOPADHYAY: No.
10
                   CHAIRMAN GOLDNER: No? Okay. I'll
11
         thank the Department for their testimony today.
12
         Again, very helpful. And thank you for your
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         time. And the witnesses are excused, after I
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         allow redirect from Mr. Young.
                   MR. YOUNG: No redirect from the
15
16
         Department, Mr. Chairman.
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                   CHAIRMAN GOLDNER: Barely out of
18
         sequence. Thank you, Mr. Young.
19
                   Okay. The witnesses are excused. And,
20
         after the witnesses get resettled, then we'll go
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         to closing statements, which, as I recall, were
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         just from Unitil and the Department of Energy.
23
                   Mr. Skoglund, if you've changed your
24
         mind, I notice you're still here, thank you, or
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         the Office of the Consumer Advocate, if you'd
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         like to make any comments, those are welcome as
 3
         well.
 4
                    I'll just note that if the -- if the
 5
         OCA or Clean Energy would like to comment on the
 6
         "confidentiality" question, that would be most
 7
         welcome. And, of course, if you have any
 8
         comments on this "capital cap" that was
 9
         discussed, that would also be welcome. So,
10
         you're welcomed to comment or not comment on
11
         those two topics as we wrap up here.
12
                    So, now that the witness are resettled,
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         let's -- well, I'll move to Clean Energy New
14
         Hampshire, Mr. Skoglund, if you have anything you
15
         would like to comment on, please, please feel
16
         free to do so?
17
                   Mr. Skoglund? Oh, you're there.
18
                    MR. SKOGLUND:
                                   Yes.
19
                    CHAIRMAN GOLDNER: Okay. Sorry.
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                    MR. SKOGLUND: Just getting to my
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         notes.
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                    CHAIRMAN GOLDNER: I didn't know if you
23
         were --
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                    MR. SKOGLUND:
                                   This will be very brief.
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Thank you for the opportunity to speak. I was thinking that we were going to be ending closer to 4:00, so I would definitely not be here then.

But I just want to say, thank you all for your time today. And I would like thank
Unitil, New Hampshire Department of Energy Staff, and the OCA, for working collaboratively on this process.

Clean Energy New Hampshire has supported this proposal from the beginning, and has only supported it more as we've gone forward, as is noted by the joint letter filed on the 23rd.

And we think that this Project should be approved, as we would note the broad agreement among an energy utility, a clean energy advocate, the State Consumer Advocates, and the State Energy Office. We feel that this is reflective of the true value that this Project brings.

As some emphasis, Clean Energy New Hampshire is a statewide non-profit organization dedicated to strengthening New Hampshire's energy -- or, economy, as we transition to a clean, efficient renewable energy system.

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Included among other membership are 35 municipal members representing nearly 350,000 New Hampshire citizens, almost exactly one-quarter of the state's population. We also include as among members not only 20 solar companies, but also the three electric or energy utilities, the regulated energy utilities in this state. And our business members also deliver clean, low-cost energy.

As such, our goal is not to advance the economic case for any one entity or segment of the New Hampshire economy, but rather enable the transition to a robust New Hampshire economy powered by abundant, local, affordable clean energy resources, with the lowest possible energy costs for all.

Just to conclude, we feel that this

Project exemplifies all of those. And we fully
support this Project, and encourage the

Commission to approve it as submitted.

CHAIRMAN GOLDNER: Thank you,
Mr. Skoglund. We'll move to Attorney Crouse, and
any comments from the Consumer Advocate.

MR. CROUSE: Yes. Thank you. I'll keep it blessedly brief. I don't have a comment

on the "confidentiality" question.

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But, regarding the "price cap", I've been really thinking about it. And I think the OCA sides with the Company on their two-stage approach.

I started of thinking of regulation price caps and risk of erosion in today's market. And I think the Company has proposed a pathway that makes sense, and that's where I initially lie.

But, in terms of implementing measures that might help secure ratepayer interest, I recognize the Commission's point that that might be something worth looking at.

CHAIRMAN GOLDNER: Thank you very much, Mr. Crouse. And we'll move to the Department of Energy.

MR. YOUNG: Thank you, Mr. Chairman.

The Department has reviewed the filing, and conducted the necessary due diligence. As the record shows, and as the Department witnesses have testified today, the Department of Energy supports the Company's proposal for the solar system located in Kingston, New Hampshire.

The Department believes the Company has 2. met the minimum statutory requirements of RSA 3 374-G, and believes that the proposed investment

is in the public interest.

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Regarding the Commission's request for a position on the "spending cap", as previously testified to here today, based on the filings we have in front of us, the Department would not recommend a spending cap on this Project. Department would like to emphasize that no recovery is being approved by the Commission here today, and, in any future cost recovery filing, the Department could recommend disallowance of any costs in this Project, if necessary.

The Company's subsequent cost recovery filing will involve a separate Department recommendation and Commission determination of whether the rates reflected in this investment are just and reasonable.

And, finally, I guess regarding any confidentiality requests from the Company, the Department would have no objection.

CHAIRMAN GOLDNER: Okay, thank So, I'm just going to summarize that you.

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         confidentiality request from all the parties
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         is -- there's objections from anyone, I think, to
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         the confidentiality.
 4
                    Would anyone like more time to consider
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         or are you comfortable with the Commission moving
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         forward with granting confidentiality? In other
 7
         words, do you want to file something later or are
         you comfortable with the Commission moving
 8
         forward?
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10
                    MR. YOUNG:
                                The Department would
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         support the Commission making that determination.
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                    CHAIRMAN GOLDNER: Okay.
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                    MR. CROUSE: The OCA has no objection.
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         So, you can proceed.
15
                    CHAIRMAN GOLDNER: Okay. Mr. Skoglund,
16
         any comments?
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                    MR. SKOGLUND: And Clean Energy New
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         Hampshire has no objection.
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                    CHAIRMAN GOLDNER: Okay. Thank you
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         very much.
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                    Okay. Very good. Let's wrap up with
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         the Company's closing.
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                    MR. CAMPBELL: Thank you,
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         Commissioners.
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The policy of New Hampshire is to encourage New Hampshire utility companies to invest in clean energy resources, because utility-owned renewable generation can cost-effectively increase energy efficiency, provide energy security, diversify the state's electricity generation portfolio, and reduce greenhouse gas emissions. This policy is enshrined in state law, at RSA 374-G.

Before a project can be approved under 374-G, the Commission must find that the project is in the public interest. There are nine comprehensive factors governing that inquiry, and the Company has presented evidence in this case demonstrating that the Kingston Solar Project meets each one of them. In particular,

Mr. Sprague's initial testimony walks through each public interest factor and discusses how the Project satisfies each one.

Rather than provide you with a mechanical recitation of each factor, for purposes of my closing I have distilled them into three key questions that I think the Commission should ask itself when making its public interest

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determination. (1) Is the Project good for customers? (2) Is the Project good for the economy? (3) Is the Project good for the environment?

With regard to the Kingston Solar Project, the answer to all three questions is "ves".

The Kingston Solar Project is good for customers because it will generate benefits that exceed the costs to build and maintain the Project. These benefits include avoided energy and transmission costs, and those result from operating the Project as a "load reducer", meaning the electric output will be delivered directly into the electric distribution system. The Project also will generate benefits in the form of revenues from renewable energy certificates and federal tax credits, both of which will accrue directly to Unitil's customers.

The Benefit-Cost analysis presented by the Company in Hearing Exhibit 3 quantitatively demonstrates that the Project is good for customers. That Benefit-Cost analysis is a major element in RSA 374-G, as evidenced by the fact

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that a benefit-cost assessment is mentioned four separate times in the statute. The Company's Benefit-Cost analysis shows the Project's direct benefits are expected to be 2.5 million on a net present value basis, with a Benefit-Cost ratio of 1.15. Significantly, that NPV calculation takes into account only the direct benefits of the Project. The Project also will produce meaningful indirect benefits, as demonstrated by the analysis conducted by Daymark Energy Advisors, and those indirect benefits further reinforce a finding that the Project is in the public interest.

The Company's Benefit-Cost analysis is grounded in reasonable and conservative assumptions. For example, the capital cost, O&M expense, decommissioning cost, maintenance capital costs, performance characteristics, and energy production estimates are all based on ReVision's proposal, which was submitted through a competitive solicitation process. Also, the Company has assumed REC prices will remain flat, despite the fact that REC prices are susceptible to inflation, and that REC values may be

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significantly higher in future years. In addition, as I just noted, the Company has not included any indirect benefits in the Benefit-Cost analysis.

To provide the Commission and the parties with further evidence of the soundness of the Benefit-Cost analysis, the Company performed a stress test and a simulation analysis. Notably, those additional analyses demonstrate that the inputs and assumptions in the Benefit-Cost analysis would have to deviate by amounts that are highly unlikely before the Kingston Solar Project no longer produces net benefits for customers. Regarding these additional analyses, the Department of Energy stated in its testimony, marked as "Hearing Exhibit Number 5" [Exh. 7?], that they provide a greater degree of confidence in the Project's long-term success, and the Department also noted that this kind of rigor is unusual for a project of this relatively small size.

The Kingston Solar Project is also good for the economy. The Kingston Solar Project is good for the economy because it will support New

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Hampshire jobs and inject dollars into the economy. In fact, the Project has already generated economic benefits, because the Company has worked with several New Hampshire-based firms to assist in its development. TF Moran,

Incorporated, based in Bedford, has provided land planning and civil engineering services; Capital Appraisal Associates, a Concord-based firm, performed the land appraisal; and Ransmeier & Spellman, also based in Concord, performed the title work.

Looking ahead, if the Commission approves the Project, the Company will contract with ReVision Energy, a solar developer based in Barrington, New Hampshire, to build the Project. And ReVision plans to use Ayer Electric as its primary electrical subcontractor, a local firm also based in Barrington. The Project also is expected to generate significant property tax revenues, almost 9 million over the life of the Project, for the Town of Kingston.

As a further demonstration of economic benefits, the Company's consultant, Daymark, performed a quantitative analysis of the indirect

economic benefits that will be generated by the Project. Daymark estimates the Project will generate over 12 million in direct, indirect, and induced economic benefits on a present value basis. In addition, Daymark estimates the Project can be expected to support 95 job years of employment over the projected 40-year life of the Project.

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The Kingston Solar Project is good for the environment. The Kingston Solar Project is good for the environment because solar generation does not produce any emissions, and it displaces fossil fuel generation with clean renewable electricity. The Company's consultant, Daymark, has quantified these benefits, and estimates the Project will produce over 2 million in carbon dioxide and nitrogen oxide savings over the life of the Project. These benefits are significant, not only because they are one of the factors the Commission must consider under RSA 374-G, but also because displacing fossil fuels improves air quality and public health for New Hampshire customers. In addition, reducing reliance on fossil fuels furthers the objective of energy

security, because solar generation is not subject to volatile fossil fuel prices.

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In summary, the Commission has a unique opportunity to approve a first-of-its-kind project that is good for customers, good for the economy, and good for the environment. As demonstrated by the joint letter of support filed on March 23rd, there is a consensus among the parties that the Project meets the statutory requirements of RSA 374-G, and the Project is in the public interest. The parties also agree that the two-stage approval process proposed by the Company is appropriate and should be adopted by the Commission.

The Company would like to thank the

Department of Energy, the Office of Consumer

Advocate, and Clean Energy New Hampshire for

their support, and the diligent and incisive

questions put to the Company in the course of

this proceeding. Those interactions helped the

Company refine its proposal and present a

stronger case for your consideration.

On the evidence presented, in accordance with and pursuant to RSA 374-G, the

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         Commission can arrive at only one conclusion in
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         this case: The Kingston Solar Project is in the
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         public interest. Accordingly, the Company
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         respectfully requests that the Commission issue
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         an order finding that the Project is in the
 6
         public interest and approving the Company's
 7
         proposed two-stage regulatory review framework.
 8
                    Thank you, Commissioners.
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                    CHAIRMAN GOLDNER: Thank you.
10
         thank you for your statements.
11
                    We'll now strike identification on
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         Exhibits 1 through 9 and admit them into
1.3
         evidence.
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                    Are there any other matters requiring
15
         our attention today?
16
                    [No verbal response.]
17
                    CHAIRMAN GOLDNER: Okay. Seeing none.
18
         Thank you for your participation. We expect to
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         render a decisional order, including addressing
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         the Motion for Confidential Treatment, in advance
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         of May 1st.
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                    We are adjourned. Thank you.
23
                    (Whereupon the hearing was adjourned
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                    at 12:25 p.m.)
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