

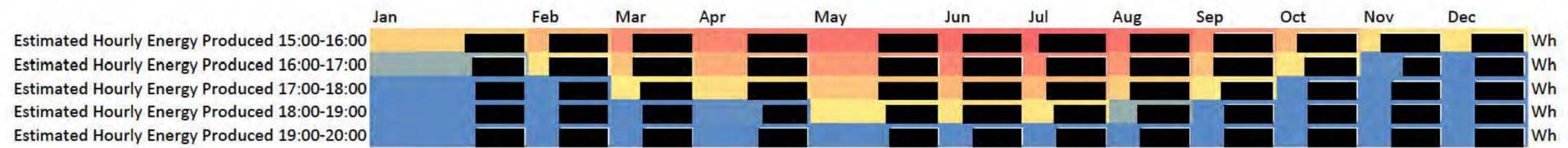
Option 5.2B - Larger DC Capacity - Multi-Axis Track Panel Design

General Information

AC Nameplate Capacity [redacted] kWh
 Total Nameplate Capacity of PV Modules [redacted] kWh
 Estimated Required Clear Space [redacted] Acres

Estimated Energy Production

Estimated Annual Energy Generated - Year 1 [redacted] kWh
 % Reduction from Year 1 to Year 2 [redacted] %
 Annual % Reduction Year 2 to the End of Life of the Facility [redacted] %



Pricing Information:

Inverters and Associated Material \$ [redacted]
 PV Modules and Associated Material \$ [redacted]
 Step-up Transformer and Associated Material \$ [redacted]
 All Other Material (excluding fence) \$ [redacted]
 Labor to Install Facility (excluding fence) \$ [redacted]

Fence Material [redacted]
 Labor to Install Fence [redacted]

5 Year Maintenance Plan [redacted]

Project Management Hours [redacted] \$/hr [redacted]
 Construction Field Representative [redacted]

One (1) Spare Step-Up Transformer [redacted]
 One (1) Spare Inverter [redacted]
 Five (5) Spare PV Modules [redacted]
 Other Recommended Spare Equipment [redacted]

Notes and Comments

[redacted]

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 1

Received: 1/27/23
Request No. DOE 1-1

Date of Response: 2/10/23
Witness: Jacob Dusling

Request:

Operations and Maintenance Costs: Please provide the sources and references for values and assumptions used to determine the estimated annual Operations and Maintenance (O&M) value in Exhibit JSD-1, Bates 66, Line 11, as well as other exhibits in the filing. Further, we were not able to identify if regular electrical termination checks and vegetation management are included in the O&M costs. Please indicate if the O&M estimate includes these, and if so, please indicate the values or percentage of total value for these.

Response:

The O&M value came directly from responses to the Preliminary EPC request for proposal (“RFP”) and is the estimated cost in the first year of a proposed maintenance, monitoring and inspection contract. This value is based on the response sheet provided as DOE 1-1 Attachment 1 (Confidential).

The Company has a similar maintenance, monitoring and inspection contract for the 1.3 MW solar generating facility owned by its affiliate, Fitchburg Gas and Electric Light Company (“FG&E”). Based on FG&E’s experience with this facility, the Company did not include O&M costs for regular checks outside of the maintenance, monitoring and inspection contract.

The Company intends to plant a “solar friendly” (lower growing) pollinator flower mixture under the arrays, a native pollinator mixture of wildflowers for the areas of the site that are not restricted to low growing species, and a mixture of native small shrubs and other plants for any area that needs landscaping. Selecting the appropriate vegetation will minimize the need for regular vegetation management. Although the Company did not include costs for vegetation management in its initial Benefit-Cost Analysis, the Company is planning to file a revised Benefit Cost Analysis, with updated inputs and assumptions from the Final EPC RFP, accompanied by supplemental testimony.¹

¹ In its initial filing, the Company explained that it is conducting a multi-stage, competitive bidding process to gather the most up to date pricing and performance assumptions for the Kingston Solar Project. In Stage 1 of the solicitation process, the Company conducted a Preliminary EPC RFP, the results of which are reflected in Exhibit FDGP-1 (BCR Model) to the initial filing. After the initial filing, the Company moved to Stage 2 of the procurement process and issued the Final EPC RFP on November 30, 2022. The Company received responses to the Final EPC RFP on January 20, 2023 and is in the process of finalizing its selection of an EPC contractor.

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 1

Received: 1/27/23
Request No. DOE 1-1

Date of Response: 2/10/23
Witness: Jacob Dusling

The Company is providing DOE 1-1 Attachment 1 on a Confidential and Redacted basis. The Company has a good faith basis for seeking confidential treatment of the Attachment pursuant to Puc 208.08(d), and intends to submit a motion for confidential treatment regarding the Attachment at or before the commencement of the hearing in Docket DE 22-073.

REDACTED

Unitil Energy Systems, Inc.

DE 22-073

DOE 1-2 Attachment 1

Page 1 of 1

AC Size (MW)	[REDACTED]	kW
DC Size (MW)	[REDACTED]	kW
Annual Production (Year 1)	[REDACTED]	kWh
Calculated Capacity Factor	22.0%	

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 1

Received: 1/27/23
Request No. DOE 1-2

Date of Response: 2/10/23
Witness: Jacob Dusling

Request:

Capacity Factor: Please provide sources and references for the estimated average Annual Capacity Factor value of 22% as indicated in Exhibit FDGP-1, Bates 191, as well as other exhibits in the filing.

Response:

The estimated capacity factor of 22% is the calculated capacity factor of the proposed facility in year one of operation. That calculation is based on responses to the Preliminary EPC RFP. Reference DOE 1-1 Attachment 1 (Confidential) for the estimated annual energy generated for the proposed facility in the first year of operation. In DOE 1-2 Attachment 1 (Confidential), Unitil has provided the calculation for the capacity factor based on the estimated annual energy generated.

Please note that the assumption identified in the request and response may be updated with a firmer assumption in an updated Benefit-Cost Analysis based on the Final EPC RFP. The Company is planning to file a revised Benefit Cost Analysis, with updated inputs and assumptions from the Final EPC RFP, accompanied by supplemental testimony.¹

The Company is providing DOE 1-2 Attachment 1 on a Confidential and a Redacted basis. The Company has a good faith basis for seeking confidential treatment of the Attachment pursuant to Puc 208.08(d), and intends to submit a motion for confidential treatment regarding the Attachment at or before the commencement of the hearing in Docket DE 22-073.

¹ In its initial filing, the Company explained that it is conducting a multi-stage, competitive bidding process to gather the most up to date pricing and performance assumptions for the Kingston Solar Project. In Stage 1 of the solicitation process, the Company conducted a Preliminary EPC RFP, the results of which are reflected in Exhibit FDGP-1 (BCR Model) to the initial filing. After the initial filing, the Company moved to Stage 2 of the procurement process and issued the Final EPC RFP on November 30, 2022. The Company received responses to the Final EPC RFP on January 20, 2023 and is in the process of finalizing its selection of an EPC contractor.

Description	Source of Cost Estimate	(a)	(b)	(c)
<u>Facility Installation Costs</u>		Cost	Labor Adjustment	Labor Adjusted ⁽¹⁾
Solar Inverter 1 and Associated Material	Response to Preliminary EPC RFP - See DOE 1-1 Attachment 1 (Confidential) - Row 25			\$
PV Modules and Associated Material	Response to Preliminary EPC RFP - See DOE 1-1 Attachment 1 (Confidential) - Row 26			
Step-up Transformer and Associated Material	Response to Preliminary EPC RFP - See DOE 1-1 Attachment 1 (Confidential) - Row 27			
Fencing	Response to Preliminary EPC RFP - See DOE 1-1 Attachment 1 (Confidential) - Row 31			
All Other Material	Response to Preliminary EPC RFP - See DOE 1-1 Attachment 1 (Confidential) - Row 28			
Project Management	Response to Preliminary EPC RFP - See DOE 1-1 Attachment 1 (Confidential) - Row 37			
Construction Field Representative	Response to Preliminary EPC RFP - See DOE 1-1 Attachment 1 (Confidential) - Row 38			
Spare Step-Up Transformer	Response to Preliminary EPC RFP - See DOE 1-1 Attachment 1 (Confidential) - Row 40			
Spare Inverter	Response to Preliminary EPC RFP - See DOE 1-1 Attachment 1 (Confidential) - Row 41			
Spare PV Modules (5)	Response to Preliminary EPC RFP - See DOE 1-1 Attachment 1 (Confidential) - Row 42			
Labor	Response to Preliminary EPC RFP - See DOE 1-1 Attachment 1 (Confidential) - Row 29			
Total Facility Installation Costs			100.0%	\$

<u>Electric System Upgrades</u>		Cost
System Impact Study	Based on recent impact studies performed for Unifit - Reference DOE 1-3 Attachment 2 (Confidential) and DOE 1-3 Attachment 3 (Confidential)	\$ 75,000
POI Material & Installation	Estimate Developed by UES Electric Operations - Reference DOE 1-3 Attachment 4 (Confidential)	350,000
Tap 3345 Line with GOAB	Estimate Developed by UES Electric Operations - Reference DOE 1-3 Attachment 4 (Confidential)	50,000
Kingston Relaying Upgrades	Estimate Developed by UES Electric Operations - Reference DOE 1-3 Attachment 4 (Confidential)	125,000
Total Electric System Upgrades		\$ 600,000

<u>Land Improvements</u>		Cost
Site Due Diligence, Design and Permitting	Per updated proposal to Site Assessment RFO - Reference DOE 1-3 Attachment 5 (Confidential)	\$
Site Work	Estimate based on site work costs for Unifit's Broken Ground Substation and discussion with TFM - Broken Ground site work was approximately \$1.1M (which included substation foundations, and other components specific to substation construction that would not be needed for the PV facility). Additionally the site work that is expected to be required to construct the PV facility to involve significantly less site work (grading, drainage, ledge removal) than Broken Ground.	550,000
Total Land Improvements		\$

agreed upon delivery schedule shall be grounds for cancellation by the Purchaser without penalty, unless the Vendor establishes the delay in delivery is without fault or negligence on his part and results from unforeseeable causes beyond his control including, without being limited to, acts of God, or of the public enemy, any preference, priority or allocation order issued by the government, fires, floods, strikes and freight embargoes.

4. TERMINATION FOR CONVENIENCE OF PURCHASER: The Purchaser may terminate this order in whole or in part by written notice to the Vendor. In such event the Purchaser shall make payment to the Vendor for all cost incurred prior to such termination reasonably allocable to this order under recognized accounting practice, together with a reasonable allowance for overhead and profit on work performed, less disposal or retention value of termination inventory. This provision shall not be deemed to limit or otherwise affect the Purchaser's right to cancel this order for the default of the Vendor.

5. PRICES: The Vendor agrees that the prices stated on the face of this order shall be considered firm unless otherwise noted, and the Vendor warrants that said prices do not exceed the prices allowed by any applicable Federal State or Local regulation.

6. COMPLIANCE WITH LAWS: The Vendor warrants that in performing work under this order he will comply with all applicable laws, rules, and regulations of governmental authorities and agrees to indemnify and save the Purchaser harmless from and against any and all liabilities, claims, costs, losses, expenses, and judgments arising from or based on any actual or asserted violation by the Vendor of any such applicable laws, rules and regulations.

7. PATENTS: The Vendor agrees to protect and save harmless the Purchaser from all costs, expenses, or damages, arising out of any infringement or claim of infringement of Patents in the use or sale of material or equipment furnished pursuant to this order.

8. ASSIGNMENT: The Vendor agrees that neither this order nor any interest therein shall be assigned or transferred by him except with the prior written approval of the Purchaser.

9. NONDISCRIMINATION IN EMPLOYMENT: By acceptance of this order, the Vendor agrees to comply with all applicable Federal, State, and Local Anti-Discrimination Laws including the Civil Rights Act of 1964 and Executive orders 11246, 11375 and amendments thereto.

prime contractors and subcontractors to employ and advance in employment qualified protected veterans.

11. SUBSTITUTION: No substitution will be permitted under this order except on specific written authority of the Purchaser's Purchasing Department.

12. ERRORS IN MATERIAL: Material or equipment delivered in error, or in excess of the quantity called for, will be returned at the Vendor's expense.

13. VENDOR'S LIABILITY FOR PURCHASER'S PROPERTY: Whenever the Vendor shall have in his possession property of the Purchaser for the Vendor's fabrication or otherwise as herein required, said Vendor shall be deemed the insurer thereof and shall be responsible for same until its acceptance as a common carrier for shipment according to the Purchaser's instructions.

14. VENDOR'S AGENT OR EMPLOYEES: If the Vendor in the performance of this order furnishes the services of himself, his agent or employee as an Erecting Engineering, Superintendent, or otherwise, in respect to the operation, adjustment, repair, installation, erection or dismantling of material and/or equipment furnished hereunder or as described herein, the Vendor agrees to assume all liability with respect to the services of himself, his agent or employees while on the premises of the Purchaser and to indemnify and save the Purchaser harmless from all claims, suits, actions and proceedings whatsoever which may be brought on account of injuries or damage to the Vendor, his agent or employee or to other persons or property which shall occur as a result of the performance of said services.

15. INDEMNITY: Vendor will indemnify and hold the Purchaser harmless against any liability, loss, damage or expense resulting from personal injury, death or property damage arising from or in connection with Vendor's performance of this order.

16. INSPECTION: Materials and equipments ordered hereunder are subject to inspection and acceptance, by Purchaser. Such inspection and acceptance however, shall not be conclusive as regard to defects which could not have reasonably been discovered by such an inspection or latent defects, fraud or such gross mistakes as amount to fraud and shall not be deemed to alter or affect the obligation of the Vendor or the Rights of Purchaser under the clause WARRANTY.

17. UNAUTHORIZED REWORK: Under no circumstances is the Vendor permitted to use substitute material to replace defective articles or to repair or rework them, by welding or otherwise without Purchaser's written permission.

18. ADJUSTMENT: Payment of Vendor's invoices shall be subject to subsequent adjustment for shortages and for allowance for articles rejected and expense of rework incurred by Purchaser.

19. WARRANTY: Vendor warrants that all articles delivered under this order will (a) conform to applicable specifications, drawings, or other description, (b) be free from defects in design. This warranty shall run to Purchaser, its customers and users of Purchaser's products.

20. PREMIUM TRANSPORTATION: Any premium transportation costs incurred by Purchaser and as a result of Vendor's failure to meet the delivery schedule shall be paid for by Vendor.

21. GOVERNING LAW: The rights of the parties hereto and the construction and effect of this order shall be subject to and determined in accordance with the laws of the state in which the Purchaser's company headquarters are located.



Purchase Order
F 79135-1
Requisition ID: 240832
All invoices, shipping papers and packages must show above purchase order number.
RECEIVING DOCK HOURS: 7:00 AM - 3:00 PM.

Ship To:

Fitchburg Gas and Electric Light Company
357 Electric Ave
Lunenburg, MA 01462
Receiving: Allan Fava
(978)353-3238, email: fava@unitil.com
Purchasing: Lani Martin
(978) 353-3265 email: martinl@unitil.com

Bill To:

Fitchburg Gas and Electric Light Company
357 Electric Ave
Lunenburg, MA 01462
Phone: (603) 773-6560 Email:
OpsServicesFGE@unitil.com
EIN: 04-1328660

Ordered From:

RLC ENGINEERING
C/O HEATHER FREEMAN
267 WHITTEN RD
HALLOWELL, ME 04347
Phone: - Fax:

Order Date:	Requisitioner:	FOB & Freight / Payment Terms
4/7/2022	Rita Nydam	Destination PP & Allowed / NET 30

Line	Qty	Description	Tax	Acct Num	Auth-CWO	Allocation	Unit Price	Unit	Sub
1	1	GID 4499. JON 383.40 - Transmission System Impact Study Proposal.	N	200000001860383	100%			EA	

Order Total:

Instructions To Vendor: See attached for terms and conditions.

Return acknowledgement to Purchasing

Acknowledgement:

Jennifer E. Lord
Signature:

04/07/2022

Date:

Terms and Conditions

- | | |
|---|---|
| <p>1. ACCEPTANCE: This order becomes a binding contract on the terms and conditions set forth herein when accepted by the Vendor either by acknowledgment or commencement of performance. No modification hereof and no condition stated by Vendor in accepting or acknowledging this order, which is in conflict or inconsistent with, or in addition to the terms and conditions set forth herein, shall be binding upon the Purchaser unless accepted in writing.</p> <p>2. SHIPMENTS: Vendor shall mail Bill of Lading and Shipping Memo to destination. Notify Purchasing Dept. promptly if unable to make shipment.</p> <p>3. TERMINATION FOR DEFAULT: The Vendor's failure to comply with any of the specifications, instructions and conditions of this order or deliver material in whole or in part in accordance with the Vendor's agreed upon delivery schedule shall be grounds for cancellation by the</p> | <p>10. AFFIRMATIVE ACTION NOTICE: vendors and subcontractors are notified that they may be subject to the provisions of: 41 CFR Section 60-300.5(a); 41 CFR Section 60-741.5(a); 41 CFR Section 60-1.4(a) and (c); 41 CFR Section 60-1.7(a); 48 CFR Section 52.222-54(e); and 29 CFR Part 471, Appendix A to Subpart A with respect to affirmative action program and posting requirements. This contractor and subcontractor shall abide by the requirements of 41 CFR 60-741.5(a). This regulation prohibits discrimination against qualified individuals on the basis of disability, and requires affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified individuals with disabilities. This contractor and subcontractor shall abide by the requirements of 41 CFR 60-300.5(a). This regulation prohibits discrimination against qualified protected veterans, and requires affirmative action by covered prime contractors and subcontractors to employ and advance in</p> |
|---|---|

Purchaser without penalty, unless the Vendor establishes the delay in delivery is without fault or negligence on his part and results from unforeseeable causes beyond his control including, without being limited to, acts of God, or of the public enemy, any preference, priority or allocation order issued by the government, fires, floods, strikes and freight embargoes.

4. TERMINATION FOR CONVENIENCE OF PURCHASER: The Purchaser may terminate this order in whole or in part by written notice to the Vendor. In such event the Purchaser shall make payment to the Vendor for all cost incurred prior to such termination reasonably allocable to this order under recognized accounting practice, together with a reasonable allowance for overhead and profit on work performed, less disposal or retention value of termination inventory. This provision shall not be deemed to limit or otherwise affect the Purchaser's right to cancel this order for the default of the Vendor.

5. PRICES: The Vendor agrees that the prices stated on the face of this order shall be considered firm unless otherwise noted, and the Vendor warrants that said prices do not exceed the prices allowed by any applicable Federal State or Local regulation.

6. COMPLIANCE WITH LAWS: The Vendor warrants that in performing work under this order he will comply with all applicable laws, rules, and regulations of governmental authorities and agrees to indemnify and save the Purchaser harmless from and against any and all liabilities, claims, costs, losses, expenses, and judgments arising from or based on any actual or asserted violation by the Vendor of any such applicable laws, rules and regulations.

7. PATENTS: The Vendor agrees to protect and save harmless the Purchaser from all costs, expenses, or damages, arising out of any infringement or claim of infringement of Patents in the use or sale of material or equipment furnished pursuant to this order.

8. ASSIGNMENT: The Vendor agrees that neither this order nor any interest therein shall be assigned or transferred by him except with the prior written approval of the Purchaser.

9. NONDISCRIMINATION IN EMPLOYMENT: By acceptance of this order, the Vendor agrees to comply with all applicable Federal, State, and Local Anti-Discrimination Laws including the Civil Rights Act of 1964 and Executive orders 11246, 11375 and amendments thereto.

employment qualified protected veterans.

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14. VENDOR'S AGENT OR EMPLOYEES: If the Vendor in the performance of this order furnishes the services of himself, his agent or employee as an Erecting Engineering, Superintendent, or otherwise, in respect to the operation, adjustment, repair, installation, erection or dismantling of material and/or equipment furnished hereunder or as described herein, the Vendor agrees to assume all liability with respect to the services of himself, his agent or employees while on the premises of the Purchaser and to indemnify and save the Purchaser harmless from all claims, suits, actions and proceedings whatsoever which may be brought on account of injuries or damage to the Vendor, his agent or employee or to other persons or property which shall occur as a result of the performance of said services.

15. INDEMNITY: Vendor will indemnify and hold the Purchaser harmless against any liability, loss, damage or expense resulting from personal injury, death or property damage arising from or in connection with Vendor's performance of this order.

16. INSPECTION: Materials and equipments ordered hereunder are subject to inspection and acceptance, by Purchaser. Such inspection and acceptance however, shall not be conclusive as regard to defects which could not have reasonably been discovered by such an inspection or latent defects, fraud or such gross mistakes as amount to fraud and shall not be deemed to alter or affect the obligation of the Vendor or the Rights of Purchaser under the clause WARRANTY.

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18. ADJUSTMENT: Payment of Vendor's invoices shall be subject to subsequent adjustment for shortages and for allowance for articles rejected and expense of rework incurred by Purchaser.

19. WARRANTY: Vendor warrants that all articles delivered under this order will (a) conform to applicable specifications, drawings, or other description, (b) be free from defects in design. This warranty shall run to Purchaser, its customers and users of Purchaser's products.

20. PREMIUM TRANSPORTATION: Any premium transportation costs incurred by Purchaser and as a result of Vendor's failure to meet the delivery schedule shall be paid for by Vendor.

21. GOVERNING LAW: The rights of the parties hereto and the construction and effect of this order shall be subject to and determined in accordance with the laws of the state in which the Purchaser's company headquarters are located.



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

August 24, 2022

Mr. Jacob Dusling, P.E.
Unitil
30 Energy Way
Exeter, NH 03833

**RE: Proposal for Engineering & Survey Services
Proposed Kingston Utility Scale PV Facility
2 Mill Road and 24 Towle Road
Lot R11-9 and R12-26**

Dear Jake:

TFMoran, Inc. (TFM) is pleased to provide this proposal to provide Engineering & Survey services for the Siting, Site Evaluation & Permitting for a proposed utility scale photovoltaic generating (PV) facilities to be located at the above noted properties. We understand the below scope of work is to support the construction of a 5 MW facility as well as provide a conceptual master plan for the siting of a future 5 MW facility on adjacent land. Our scope of work is as follows:

Scope of Work:

Task 1 Wetland Delineation

TFM will delineate wetlands on lot R-11 and R12-26, comprised of approximately 96-acres. Wetland flags will be located during the wetlands survey defined in task 2. We have carried an allowance of (6) days for this task.

Task 2 Survey Services

Boundary & Topographic Survey

TFM will conduct research at the Town of Kingston, the Rockingham County Registry of Deeds and the State of New Hampshire Archives. TFM will conduct an accurate instrument of the subject parcels. TFM will process the field survey data to confirm compliance with the NH Board of Land Surveyors Rules & Regulations. TFM will locate physical improvements on the subject tract and the adjacent roadway. TFM will locate the visible, above ground portions of utilities immediately adjacent to the subject tracts. TFM will obtain LIDAR data from NHGRANIT and perform a ground verification. TFM will survey the location of the delineated wetlands. TFM will analyze the field and record evidence. TFM will determine the parcel boundaries based on our analysis. TFM will prepare an Existing Conditions Plan that demonstrates the results of our survey efforts.

ALTA Survey

TFM will prepare a 2021 ALTA/NSPS Land Title Survey, including ALTA Table "A" items 1 (State Requirement), 2, 3, 4, 6(b), 7(a), 7(b1), 7(c), 8, 9, 13 and 14. Client will provide a current Title Commitment and exception documents. Final product will be a 2021 ALTA/NSPS Land Title Survey certified to parties, as specified by the Client.

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

Mr. Jacob Dusling
Re: Proposal for Engineering & Survey Services
2 Mill Road & 24 Towle Road, Kingston, NH

Monuments

Missing corners can be installed at the completion of the survey for [REDACTED] per monument. We have carried an allowance of (25) monuments.

Task 3

Site Plan Package

TFM will prepare a Site Plan package showing the layout of the Project on the selected parcel with dimensional information, grading and drainage design (including oil containment), erosion control, utility service design, landscape design, lighting, and details of site work items suitable for construction, stamped by a licensed State of New Hampshire Professional Engineer. This Plan Set will include;

- Cover Plan
- Existing Conditions (see task 2)
- Conceptual Master Plan (future 5 MW facility to be shown)
- Lot Line Adjustment Plan
- Site Preparation Plan
- Site Layout Plan
- Grading, Drainage & Utility Plan
- Stormwater Management/Erosion Control Plan
- Driveway Plan & Profile
- Sight Distance Plan & Profile
- Landscaping Plan
- Lighting Plan
- Details for site work items suitable for construction

Preliminary Site Layout:

TFM will prepare a Preliminary Site Layout Plan showing the layout of the Project on the subject parcels with dimensional information and preliminary grading & drainage design. The plan shall be used to develop estimated site construction costs.

Site Construction Cost Estimate:

TFM will prepare order of magnitude construction cost estimates based on the preliminary site layout plans prepared.

Site Soils Mapping:

Site-specific soils mapping is required per the NH Department of Environmental Services, Alteration of Terrain permitting program. As part of this proposal, TFM will have a NH Certified Soil Scientist map readily accessible and identifiable surficial soil types at the Project site.

Stormwater Management Report:

A stormwater management report will be provided that includes an analysis of the proposed stormwater management system and its effect on the surrounding area and existing drainage infrastructure in accordance with City and State requirements. TFM will perform test pits and infiltration testing as required for the drainage systems (backhoe cost billed as a reimbursable expense).

Traffic:

A Trip Generation Memo will be provided to address the anticipated traffic generated by the proposed facility.

Mr. Jacob Dusling
Re: Proposal for Engineering & Survey Services
2 Mill Road & 24 Towle Road, Kingston, NH

Renderings:

Due to the visual nature of the proposed project, TFM will develop a 3D rendering of the subject development for use in conveying the project to the anticipated review agencies.

Agency Comment Allowance:

TFM has included an allowance of [REDACTED] of the estimated budget amount for the Site Plans to respond to review comments received by government agencies and their consultants.

Task 4

Preparing Applications

TFM will prepare applications, plans, and applicable support materials for the following filings with the City, State and Federal Government.

- **Town of Kingston**
 - Zoning Board
 - Use Variance
 - Planning Board
 - Site Plan Review
 - Conservation Commission
 - Wetland Dredge and Fill Review
 - Wetland Buffer Impact Review
- **State of New Hampshire**
 - **NH Natural Heritage Bureau (NHB)**
 - NHB DataCheck
 - **NH Fish & Game (NHFG)**
 - Wildlife Assessment per Env-Wq 1503.19(h)
 - **NH Department of Environmental Service (NHDES)**
 - Alteration of Terrain (AoT)
 - Major Wetlands Dredge and Fill (including functional assessment)
 - **NH Division of Historical Resources (NHDHR)**
 - Request for Project Review (RPR)
- **Federal**
 - **US Army Corps of Engineers (ACOE)**
 - NH Programmatic General Permit (PGP)
 - **US Environmental Protection Agency (EPA)**
 - NPDES
 - Construction Stormwater Discharge Notice of Intent (NOI)

Phase IA Archeological Sensitivity Assessment:

TFM will coordinate with an Archeological Consulting firm to provide a Phase IA Archeological Sensitivity Assessment for the subject properties. This study will follow guidelines established for archaeological surveys by the New Hampshire Division of Historic Resources (NHDHR).

Phase 1 Environmental Site Assessment:

TFM or their subconsultant will provide a Phase 1 Environmental Site Assessment in accordance with ASTM E 1527-05 for the subject properties.

Mr. Jacob Dusling
Re: Proposal for Engineering & Survey Services
2 Mill Road & 24 Towle Road, Kingston, NH

NH Fish & Game:

TFM will coordinate with NHFG to determine the need for endangered species studies. TFM has included an allowance of (12) hours. If studies beyond the wildlife habitat assessment are required, they will be performed as an Additional Service at the Clients direction.

Task 5 Meetings & Coordination

TFM will attend meetings with the Client, Town Agencies and Boards for the processing of the permit applications and for coordination of the project's activities including but not limited to scheduling and project status reports. TFM has included an allowance of (60) hours. If additional meetings are needed, they will be attended as directed by the Client and billed on a time and materials basis.

Task 6 Geotechnical Services

Typical Subsurface Investigation, Geotechnical Report & Sampling

TFM will subcontract with a geotechnical/boring company to perform test pits appropriately spaced for the anticipated development area, assumed to be 25 to 35-acres for the proposed 5MW facility.

Task 7 Permit Fees

TFM has estimated this value based on similar project experience. Permit fees will be confirmed once applications have been prepared. This estimate does not include fees associated with mitigation for wetland impacts.

Task 8 Reimbursable Expenses

TFM has estimated this value based on similar project experience which assumes [REDACTED] of the budget cost.

Assumptions/Exclusions:

This proposal is only for the services outlined above and is applicable the regulations in place at the time of this proposal. TFM has assumed reasonable recovery and agreement between field monuments and plans and deeds of record with no disputed boundaries. Should we find a significant boundary dispute the Client will be contacted with anticipated costs. The following items have not been included in this proposal but can be performed by our office at the Client's request. TFM will provide an estimate for the Client's authorization prior to beginning such additional work if requested:

- Unitil or their vendor will provide the General Arrangement for the PV facility including accessory outbuildings. TFM will work with Unitil and their vendor on the siting of these elements on the subject parcels.
- Significant revisions to the development components/layout requested by Client or Regulatory Agencies after commencement of site design will be additional services.
- We have excluded Easement Plans, legal descriptions, etc.
- We assume the existing adjacent roadways are adequate for access to this project without improvements, so we have not included a formal Traffic Impact and Access Study (TIAS) and we assume that no offsite roadway design will be required.
- We assume that there is adequate capacity in the adjacent utilities to service this project, and that no offsite utility studies or designs will be required.
- Significant revisions to the development components/layout requested by Client or Regulatory Agencies after commencement of site design will be additional services.
- This proposal does not include structural design for any onsite retaining walls over four feet.

Mr. Jacob Dusling
Re: Proposal for Engineering & Survey Services
2 Mill Road & 24 Towle Road, Kingston, NH

- We have not included, Wetlands Studies (other than delineation), Hazardous Waste Studies, Fiscal Impact Studies, Noise Studies, Air Quality Studies (including generators), Wildlife Studies (other than those identified), Phase 1B Archeological Studies or other technical studies and reports not included above.

Compensation:

TFM will complete this Scope of Services for the Estimated Sums shown below plus miscellaneous reimbursable expenses.

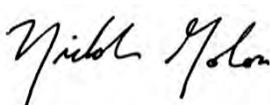
Schedule of Fees:

Task 1:	Wetland Delineation	██████████
Task 2:	Survey Services	██████████
Task 3:	Site Plan Package	██████████
Task 4:	Preparing Applications	██████████
Task 5:	Meetings & Coordination	██████████
Task 6:	Geotechnical Services	██████████
Task 7:	Permit Fees	████████████████████
Task 8:	Reimbursable Expenses	██
Total:		██████████

Fees that may be required by the City, State or Federal government and/or other agencies, have been estimated and will be confirmed prior to permit submittal. Fees will be paid by TFM and billed to the client under the specified task. Typical reimbursable expenses run approximately ██████ to ██████ of the budget cost and have been estimated at ██████ for this project. TFM will bill on a monthly basis and the bill will reflect work completed to date.

We appreciate this opportunity to provide you with a proposal for this project and are available to meet with you at any time to discuss this project, the scope of work or budget.

We look forward to working with you on another successful project!

Sincerely,
TFMoran Inc.

Nicholas Golon, PE
Principal

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 1

Received: 1/27/23
Request No. DOE 1-3

Date of Response: 2/10/23
Witness: Jacob Dusling and Andre Francoeur

Request:

Construction Cost Estimates: Please provide sources used for the determination of construction cost estimates, including labor rates, material costs, and material sourcing. Reference exhibit FDGP-2 as well as other exhibits. Further, if applicable and available, provide assumptions used to comply with the requirements of the Inflation Reduction Act (IRA). Please include assumed labor rates, number of personnel during construction, material and component sourcing, and any other relevant information regarding the IRA requirements.

Response:

Reference DOE 1-3 Attachment 1 (Confidential) (and the associated attachments referenced in this Attachment¹) for sources and documentation of construction cost estimates.

The vendors participating in the RFP process have informed the Company they expect to comply with the Wage and Apprenticeship requirements included in the IRA. To satisfy these requirements, certain wage minimums must be met and certain percentages of construction must be performed by qualified apprentices. If the Wage and Apprenticeship requirements are met, the ITC rate is 30%. The Company will confirm that the Engineering, Procurement and Construction (“EPC”) contractor who is awarded the project has practices in place to ensure that all Apprenticeship and Prevailing Wage conditions are met and documented for both the EPC contractor’s internal and subcontracted labor.

It is not yet clear whether the Kingston Solar Project will qualify for the Domestic Content bonus credit. If this project were to qualify for the Domestic Content bonus credit of 10% the expected all-in ITC rate would be 40%. The IRS has not yet published guidance on the Domestic Content bonus.

Please note that the assumptions and inputs identified in the request and response may be updated with firmer assumptions in an updated Benefit-Cost Analysis based on the Final EPC RFP. The Company is planning to file a revised Benefit Cost Analysis, with

¹ DOE 1-3 Attachment 2 (Confidential), DOE 1-3 Attachment 3 (Confidential), DOE 1-3 Attachment 4 and DOE 1-3 Attachment 5 (Confidential).

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 1

Received: 1/27/23
Request No. DOE 1-3

Date of Response: 2/10/23
Witness: Jacob Dusling and Andre Francoeur

updated inputs and assumptions from the Final EPC RFP, accompanied by supplemental testimony.²

The Company is providing DOE 1-3 Attachments 1 through 3 and Attachment 5 on a Confidential and a Redacted basis. The Company has a good faith basis for seeking confidential treatment of the Attachments pursuant to Puc 208.08(d), and intends to submit a motion for confidential treatment regarding the Attachment at or before the commencement of the hearing in Docket DE 22-073.

² In its initial filing, the Company explained that it is conducting a multi-stage, competitive bidding process to gather the most up to date pricing and performance assumptions for the Kingston Solar Project. In Stage 1 of the solicitation process, the Company conducted a Preliminary EPC RFP, the results of which are reflected in Exhibit FDGP-1 (BCR Model) to the initial filing. After the initial filing, the Company moved to Stage 2 of the procurement process and issued the Final EPC RFP on November 30, 2022. The Company received responses to the Final EPC RFP on January 20, 2023 and is in the process of finalizing its selection of an EPC contractor.

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 1

Received: 1/27/23
Request No. DOE 1-5

Date of Response: 2/10/23
Witness: Jacob Dusling

Request:

Solar Panel Estimated Output: Please provide the sources and references for the cited solar panel output degradation factor of 0.5%/year (85.5% output at year 30). Reference JSD-1, Bates 62, FDGP-1, Bates 198, and other exhibits.

Response:

The panel output degradation factor of 0.5%/year is based on a response to the Preliminary EPC RFP. Please reference DOE 1-1 Attachment 1 (Confidential) for the values provided by the vendor.

Additionally, reference DOE 1-5 Attachment 1 (Confidential) for the cut sheet of the panels proposed in the Preliminary RFP response. [REDACTED]

Please note that the input identified in the request and response may be updated with a firmer assumption in an updated Benefit-Cost Analysis based on the Final EPC RFP. The Company is planning to file a revised Benefit Cost Analysis, with updated inputs and assumptions from the Final EPC RFP, accompanied by supplemental testimony.¹

The Company is providing DOE 1-5 Attachment 1 on a Confidential basis.² The Company has a good faith basis for seeking confidential treatment of the Attachment pursuant to Puc 208.08(d), and intends to submit a motion for confidential treatment regarding the Attachment at or before the commencement of the hearing in Docket DE 22-073.

¹ In its initial filing, the Company explained that it is conducting a multi-stage, competitive bidding process to gather the most up to date pricing and performance assumptions for the Kingston Solar Project. In Stage 1 of the solicitation process, the Company conducted a Preliminary EPC RFP, the results of which are reflected in Exhibit FDGP-1 (BCR Model) to the initial filing. After the initial filing, the Company moved to Stage 2 of the procurement process and issued the Final EPC RFP on November 30, 2022. The Company received responses to the Final EPC RFP on January 20, 2023 and is in the process of finalizing its selection of an EPC contractor.

² The Company cannot provide a redacted version of this attachment because it would allow bidders in the ongoing competitive solicitation to determine if their proposal has or has not been used as the basis for the Company's Benefit Cost Analysis (i.e., their bid is or is not the top ranked bid).

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 1

Received: 1/27/23
Request No. DOE 1-6

Date of Response: 2/10/23
Witness: Jacob Dusling

Request:

Solar Panel Estimated Life and Project Duration: The proposed project is based on an assumed project life of 30 years. Please provide the assumptions, sources and references used to form the basis for the 30-year duration. Further, please describe the plans for the project at the end of the 30-year period.

Response:

The assumed project life of 30 years is based on the response to the Preliminary EPC RFP. Page 8 of DOE 1-6 Attachment 1 (Confidential) indicates that the expected life of the system is generally 30+ years.

Please note that the assumption identified in the request and response may be updated with a firmer assumption in an updated Benefit-Cost Analysis based on the Final EPC RFP. The Company expects to file a revised Benefit Cost Analysis, with updated inputs and assumptions from the Final EPC RFP, accompanied by supplemental testimony.¹ Also, as relevant here, the Company plans to assess, as part of its Benefit-Cost Analysis whether the Project can/should be re-powered or decommissioned at the end of its useful life. If the Company determines that decommissioning is the appropriate option, then the equipment associated with the PV Facility would be removed and the property would be left to naturally rehabilitate.

Per follow-up questions with PV vendors, the Company believes the decommissioning costs for the facility will be negligible given the scrap value of the equipment being removed. When the salvage value of recycled panels and steel is considered, the salvage value is expected to be greater than the decommissioning cost. See DOE 1-6 Attachment 2 (Confidential) for a response regarding decommissioning from the vendor, which supports this assumption.

¹ In its initial filing, the Company explained that it is conducting a multi-stage, competitive bidding process to gather the most up to date pricing and performance assumptions for the Kingston Solar Project. In Stage 1 of the solicitation process, the Company conducted a Preliminary EPC RFP, the results of which are reflected in Exhibit FDGP-1 (BCR Model) to the initial filing. After the initial filing, the Company moved to Stage 2 of the procurement process and issued the Final EPC RFP on November 30, 2022. The Company received responses to the Final EPC RFP on January 20, 2023 and is in the process of finalizing its selection of an EPC contractor.

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 1

Received: 1/27/23
Request No. DOE 1-6

Date of Response: 2/10/23
Witness: Jacob Dusling

The Company is providing DOE 1-6 Attachments 1 and 2 on a Confidential basis.² The Company has a good faith basis for seeking confidential treatment of these Attachments pursuant to Puc 208.08(d), and intends to submit a motion for confidential treatment regarding the Attachment at or before the commencement of the hearing in Docket DE 22-073.

² The Company cannot provide a redacted version of this attachment because it would allow bidders in the ongoing competitive solicitation to determine if their proposal has or has not been used as the basis for the Company's Benefit Cost Analysis (i.e., their bid is or is not the top ranked bid).

	Fixed Panel AC/DC Match		Single Axis Track Panel AC/DC Match		Fixed Panel DC Upsize		Single Axis Track Pane DC Upsize		
	Vendor 1	Vendor 2	Vendor 1	Vendor 2	Vendor 1	Vendor 2	Vendor 1	Vendor 2	
AC Size (MW)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	kW
DC Size (MW)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	kW
Annual Production (Year 1)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	kWh
Calculated Capacity Factor	17.1%	15.6%	18.9%	19.3%	21.8%	18.8%	22.0%	26.5%	
ISO Peak Hr Production (Year 1)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	kWh
Average Monthly Peak Hour Production (Year 1)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	kWh
Facility Cost \$	[REDACTED]								

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 1

Received: 1/27/23
Request No. DOE 1-7

Date of Response: 2/10/23
Witness: Jacob Dusling

Request:

Inverter Sizing Impact on Output: Please provide references for the cited improvement in the Capacity Factor by upsizing the Direct Current (DC) capacity. Reference exhibit JSD-1, Bates 61.

Response:

As part of the Preliminary EPC RFP, the Company requested that vendors provide estimated annual production of proposed facilities with the following characteristics:

- Fixed Panels with Match AC and DC capacity
- Fixed Panels with upsized DC capacity
- Single Axis Tracking Panels with Match AC and DC capacity
- Single Axis Tracking Panels with upsized DC capacity

A summary of the data is provided in DOE 1-7 Attachment 1 (Confidential).

The Company is providing DOE 1-7 Attachment 1 on a Confidential and Redacted basis. The Company has a good faith basis for seeking confidential treatment of the Attachment pursuant to Puc 208.08(d), and intends to submit a motion for confidential treatment regarding the Attachment at or before the commencement of the hearing in Docket DE 22-073.

Estimated Hourly Energy Produced from Vendor

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Estimated Hourly Energy Produced 15:00-16:00	[REDACTED]	Wh											
Estimated Hourly Energy Produced 16:00-17:00	[REDACTED]) Wh											
Estimated Hourly Energy Produced 17:00-18:00	[REDACTED]	Wh											
Estimated Hourly Energy Produced 18:00-19:00	[REDACTED]	Wh											
Estimated Hourly Energy Produced 19:00-20:00	[REDACTED]) Wh											
Days in Month	31	28	31	30	31	30	31	31	30	31	30	31	

Estimated Hourly Energy Produced per Day (Estimated Hourly Energy Produced from Vendor / Days in Month)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Estimated Hourly Energy Produced 15:00-16:00	[REDACTED]	Wh											
Estimated Hourly Energy Produced 16:00-17:00	[REDACTED]) Wh											
Estimated Hourly Energy Produced 17:00-18:00	[REDACTED]	Wh											
Estimated Hourly Energy Produced 18:00-19:00	[REDACTED]	Wh											
Estimated Hourly Energy Produced 19:00-20:00	[REDACTED]) Wh											

Historical ISO Peak

Peak Hour Begin	Peak Hour End		# from 2012-2021		
			June	July	Aug
8/09/2001	14:00	15:00			
8/14/2002	14:00	15:00	1400-1500		1
8/22/2003	14:00	15:00	1500-1600		
8/30/2004	15:00	16:00	1600-1700	2	3
7/27/2005	14:00	15:00	1700-1800		2
8/02/2006	14:00	15:00			
8/03/2007	14:00	15:00			
6/10/2008	14:00	15:00			
8/18/2009	14:00	15:00			
7/06/2010	14:00	15:00			
7/22/2011	14:00	15:00			
7/17/2012	16:00	17:00			
7/19/2013	16:00	17:00			
7/02/2014	14:00	15:00			
7/29/2015	16:00	17:00			
8/12/2016	14:00	15:00			
6/13/2017	16:00	17:00			
8/29/2018	16:00	17:00			
7/30/2019	17:00	18:00			
7/27/2020	17:00	18:00			
6/29/2021	16:00	17:00			

Calculated Estimated Output at the ISO Peak Hour

	Wh	kWh	
Average of Estimated Output at Historical Month/Hour	2,408,869	2,409	Utilized 15:00-16:00 for 14:00-15:00 ISO Peak Hour
Average of Estimated Output at Historical Month/Hour (excluding 14:00-15:00)	2,230,330	2,230	
Average of 16:00-17:00 and 17:00-18:00 for months of June, July and August)	1,836,216	1,836	
Based on the Above Values elected to utilize:		1,850	

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 1

Received: 1/27/23
Request No. DOE 1-12

Date of Response: 2/10/23
Witness: Jacob Dusling

Request:

System Output During ISO NE Peak Hour: Please provide sources and references for the estimated output of 1,850 kW during the historical annual ISO-NE peak hour. Reference Exhibit JSD-1, Bates 59 and in other exhibits.

Response:

The estimated output during the historical annual ISO-NE peak hour was calculated based on the response to the Preliminary EPC RFP. DOE 1-1 Attachment 1 (Confidential) (rows 17 to 21) includes the estimated hourly production per month for the hours indicated by the vendor. This value was calculated by the vendor by summing the hourly output of the proposed facility on a monthly basis.

Unitil calculated the estimated output at the ISO-NE peak hour based on the information provided in the RFP response and the ISO-NE historical peak hour from 2012 to 2021. Please refer to DOE 1-12 Attachment 1 (Confidential) for the Unitil calculation of the system output during the typical ISO-NE historical peak hour.

Please note that the assumption identified in the request and response may be updated with a firmer assumption in an updated Benefit-Cost Analysis based on the Final EPC RFP. The Company is planning to file a revised Benefit Cost Analysis, with updated inputs and assumptions from the Final EPC RFP, accompanied by supplemental testimony.¹

The Company is providing DOE 1-12 Attachment 1 on a Confidential and Redacted basis. The Company has a good faith basis for seeking confidential treatment of the Attachment pursuant to Puc 208.08(d), and intends to submit a motion for confidential treatment regarding the Attachment at or before the commencement of the hearing in Docket DE 22-073.

¹ In its initial filing, the Company explained that it is conducting a multi-stage, competitive bidding process to gather the most up to date pricing and performance assumptions for the Kingston Solar Project. In Stage 1 of the solicitation process, the Company conducted a Preliminary EPC RFP, the results of which are reflected in Exhibit FDGP-1 (BCR Model) to the initial filing. After the initial filing, the Company moved to Stage 2 of the procurement process and issued the Final EPC RFP on November 30, 2022. The Company received responses to the Final EPC RFP on January 20, 2023 and is in the process of finalizing its selection of an EPC contractor.

General Information

AC Nameplate Capacity	4,999	kWh
Total Nameplate Capacity of PV Modules	6,998.40	kWh
Estimated Required Clear Space	23	Acres
Expected Life of the Facility	35+	Years

Equipment Life and Warranty Information

	Warranty Term	Expected Life
Inverters	10 Years (15 Yr. Optional)	10 Years
PV Modules	30 Years	30 Years
Racking Equipment	10 Years	10+ Years

Estimated Energy Production

Estimated Annual Energy Generated - Year 1	9,399,535	kWh
% Reduction from Year 1 to Year 2	0.5	%
Annual % Reduction Year 2 to the End of Life of the Facility	0.5	%



Pricing Information:

	\$
Pre-Procurement and Construction Activities (excluding SIS)	\$ [REDACTED]
SIS	[REDACTED]
Site Construction	\$ [REDACTED]
Inverters and Associated Material	\$ [REDACTED]
PV Modules and Associated Material	\$ [REDACTED]
Racking Equipment and Associated Material	\$ [REDACTED]
Step-up Transformer and Associated Material	[REDACTED]
Fence Material	\$ [REDACTED]
All Other Material (excluding fence)	\$ [REDACTED]
Labor to Install and Commission Facility	\$ 2,729,376.00

	Hours	\$/hr
Project Management	[REDACTED]	[REDACTED]
Construction Field Representative	[REDACTED]	[REDACTED]
One (1) Spare Step-Up Transformer	\$ [REDACTED]	[REDACTED]
One (1) Spare Inverter	[REDACTED]	[REDACTED]
Five (5) Spare PV Modules	\$ [REDACTED]	[REDACTED]
Other Recommended Spare Equipment	[REDACTED]	[REDACTED]
Total Project Cost (excluding maintenance plan)	\$ [REDACTED]	[REDACTED]
5 Year Maintenance Plan	[REDACTED]	[REDACTED]

Option BESS Information:

Nameplate Capacity of BESS	8,000 kWh	2,000 kW
Warranty Term	BESS TBD Years	Expected Life 15-20 Years
	\$	
BESS	\$ [REDACTED]	
All other material	[REDACTED]	
Labor to Install and Commission BESS	[REDACTED]	
Hours	\$/hr	
BESS Project Management	[REDACTED]	[REDACTED]
BESS Construction Field Representative	[REDACTED]	[REDACTED]
BESS Recommended Spare Equipment	TBD	
Total Project Adder for BESS (excluding maintenance plan)	[REDACTED]	
BESS 5 Year Maintenance Plan	TBD	

Notes and Comments

[REDACTED]

General Information

AC Nameplate Capacity	4.99	kWh
Total Nameplate Capacity of PV Modules	6,534	kWh
Estimated Required Clear Space	25	Acres
Expected Life of the Facility	25	Years

Equipment Life and Warranty Information

	Warranty Term	Expected Life
Inverters	10 Years	10 Years
PV Modules	30 Years	30 Years
Racking Equipment	25 Years	25 Years

Estimated Energy Production

Estimated Annual Energy Generated - Year 1	9148370	kWh
% Reduction from Year 1 to Year 2	< 2%	%
Annual % Reduction Year 2 to the End of Life of the Facility	0.45%	%

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Estimated Hourly Energy Produced per day 15:00-16:00													kWh
Estimated Hourly Energy Produced per day 16:00-17:00													kWh
Estimated Hourly Energy Produced per day 17:00-18:00													kWh
Estimated Hourly Energy Produced per day 18:00-19:00													kWh
Estimated Hourly Energy Produced per day 19:00-20:00													kWh

Pricing Information:

Pre-Procurement and Construction Activities (excluding SIS) \$ [REDACTED]
 SIS \$ [REDACTED]

Site Construction \$ [REDACTED]

Inverters and Associated Material \$ [REDACTED]
 PV Modules and Associated Material \$ [REDACTED]
 Racking Equipment and Associated Material \$ [REDACTED]
 Step-up Transformer and Associated Material \$ [REDACTED]
 Fence Material \$ [REDACTED]
 All Other Material (excluding fence) \$ [REDACTED]
 Labor to Install and Commission Facility \$ [REDACTED]

Hours \$/hr
 Project Management [REDACTED]
 Construction Field Representative [REDACTED]

One (1) Spare Step-Up Transformer [REDACTED]
 One (1) Spare Inverter [REDACTED]
 Five (5) Spare PV Modules [REDACTED]
 Other Recommended Spare Equipment [REDACTED]

Total Project Cost (excluding maintenance plan) \$ [REDACTED]

5 Year Maintenance Plan \$ [REDACTED]

Includes data acquisition and presentment via Tangent AMP

Option BESS Information:

Nameplate Capacity of BESS 8290 kWh 2304 kW

Warrantly Term Expected Life
 BESS 15 Years 15 Years

\$
 BESS \$ [REDACTED]
 All other material \$ [REDACTED]
 Labor to Install and Commission BESS \$ [REDACTED]

Hours \$/hr
 BESS Project Management [REDACTED]
 BESS Construction Field Representative [REDACTED]

BESS Recommended Spare Equipment \$ [REDACTED]

Total Project Adder for BESS (excluding maintenance plan) \$ [REDACTED]

BESS 5 Year Maintenance Plan \$ [REDACTED]

Notes and Comments

[REDACTED]

Criteria	Description	0 Does not Meet Requirements/Expectations	1 Partially Meets Requirements/Expectations	2 Fully Meets Requirements/Expectations	3 Exceeds Requirements/Expectations
Proposal Attributes					
1.1	Does proposal address all aspects of the RFP. Is the proposal well organized and easy to follow				
1.2	Does the proposal reflect that the vendor understands the needs of Unitil				
1.3	Does the proposed contract structure and terms meet Unitil's needs				
RFP Compliance					
2.X.X	Proposals complies with specification of RFP, with exception of warranty/life expectance and origin of manufacture				
Major Equipment Warranty, Origin and Lead Time					
3.X.1	Warranty of Equipment				
3.X.2	Origin of Manufacturer of Equipment				
3.X.3	Lead Time of Major Equipment				
3.X.4	Experience of Manufacturer				
Vendor Background, Characteristics, Experiences					
4.X	Vendors background and experience				
Vendor Background, Characteristics, Experiences					
5.1	Vendors ability to provide futura maintenance and support services once facility is in service				
Local Business/Labor Involvement					
6.1	In the ADMS technical mature and has a wide use in the Utility industry				

		Score	Rank	Score	Rank	Score	Rank
Multiplier/Weight	Section						
1.0	Proposal Attributes						
1.5	RFP Compliance						
2.0	Major Equipment Warranty, Origin and Lead Time						
1.5	Vendor's Background, Characteristics and Experience						
1.0	Future Support						
1.0	Local Business/Labor Involvement						
	Total						

**Unitil Energy Systems d/b/a Unitil
Benefit-Cost Analysis**

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Unitil Energy Systems d/b/a Unitil
Benefit-Cost Analysis
Schedule 1
Summary

Line No.	Description	Reference	Year 31	Year 32	Year 33	Year 34	Year 35
1	Direct Customer Benefits						
2	Avoided Energy Costs	Direct Customer BenefitsLine 11	\$ 991,019	\$ 1,004,893	\$ 1,018,926	\$ 1,033,118	\$ 1,047,470
3	Avoided Capacity Costs	Direct Customer BenefitsLine 18	77,661	78,749	79,848	80,961	82,085
4	Local Transmission Benefits	Direct Customer BenefitsLine 26	14,803	15,010	15,220	15,432	15,646
5	Regional Transmission Benefits	Direct Customer BenefitsLine 36	109,347	110,878	112,427	113,992	115,576
6	Renewable Energy Credit Savings	Direct Customer BenefitsLine 41	293,618	291,891	290,164	288,436	286,709
7	Total Direct Customer Benefits	Sum Lines 2 through 6	<u>\$ 1,486,449</u>	<u>\$ 1,501,421</u>	<u>\$ 1,516,584</u>	<u>\$ 1,531,939</u>	<u>\$ 1,547,487</u>
8							
9	Costs						
10	Revenue Requirement	Rate Base & Revenue RequirementLine 29	\$ 1,004,874	\$ 981,206	\$ 957,154	\$ 934,985	\$ 913,434
11	Total Costs	Line 10	<u>\$ 1,004,874</u>	<u>\$ 981,206</u>	<u>\$ 957,154</u>	<u>\$ 934,985</u>	<u>\$ 913,434</u>
12							
13	Net Benefit (Cost) to Customers	Line 7 - Line 11	\$ 481,575	\$ 520,215	\$ 559,431	\$ 596,954	\$ 634,053
14							
15	Required Rate of Return	Cost of CapitalLine 8Column (h)					
16							
17	Net Present Value (NPV)						
18	PV of Direct Customer Benefits	PV of Line 7					
19	PV of Costs	PV of Line 11					
20	NPV of Project	Line 18 - Line 19					
21							
22	Internal Rate of Return	Internal Rate of Return of Line 13					
23							
24	Benefit-Cost Ratio (BCR)	Line 18 ÷ Line 19					

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 2
 Direct Customer Benefits

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Capacity - Nameplate		4.99 MW									
2	Efficiency Rate	Decrease 0.5% annually	100.0%	99.5%	99.0%	98.5%	98.0%	97.5%	97.0%	96.5%	96.0%	95.5%
3	Capacity - Adjusted for Efficiency Rate	Line 1 x Line 2	4.99 MW	4.97 MW	4.94 MW	4.92 MW	4.89 MW	4.87 MW	4.84 MW	4.82 MW	4.79 MW	4.77 MW
4												
5	EIA Energy Outlook 2022 - Escalation Rate ⁽¹⁾	Annual Escalation Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
6												
7	Avoided Energy Costs											
8	Annual Capacity Factor		21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%
9	Annual Production (kWh)	Line 3 x Line 8 x 1000 x 365 x 24	9,399,535	9,352,537	9,305,540	9,258,542	9,211,544	9,164,547	9,117,549	9,070,551	9,023,554	8,976,556
10	Energy Rate (\$ Per kWh) ⁽²⁾	See Footnote	\$ 0.0907	\$ 0.0761	\$ 0.0740	\$ 0.0727	\$ 0.0741	\$ 0.0756	\$ 0.0771	\$ 0.0787	\$ 0.0802	\$ 0.0818
11	Annual Avoided Energy Costs	Line 9 x Line 10	\$ 852,325	\$ 711,845	\$ 689,075	\$ 672,813	\$ 682,786	\$ 692,888	\$ 703,122	\$ 713,487	\$ 723,986	\$ 734,620
12												
13	Avoided Capacity Costs											
14	PV Capacity at Annual Peak		29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%
15	Capacity at Peak Hour (kW)	Line 3 x Line 14 x 1000	1,489	1,482	1,474	1,467	1,459	1,452	1,444	1,437	1,429	1,422
16	Capacity Clearing Price (\$ kW-Month) ⁽³⁾	See Footnote	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51
17	Monthly Avoided Capacity Costs	Line 15 x Line 16	\$ 5,226	\$ 5,200	\$ 5,174	\$ 5,148	\$ 5,122	\$ 5,096	\$ 5,070	\$ 5,043	\$ 5,017	\$ 4,991
18	Annual Avoided Capacity Costs	Line 17 x 12	\$ 62,717	\$ 62,403	\$ 62,090	\$ 61,776	\$ 61,462	\$ 61,149	\$ 60,835	\$ 60,522	\$ 60,208	\$ 59,894
19												
20	Local Transmission Benefits											
21	PV Capacity at Monthly Peak		9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%
22	Capacity at Peak Hour (MW-Month)	Line 3 x Line 21	0.49	0.49	0.48	0.48	0.48	0.48	0.47	0.47	0.47	0.47
23	Transmission Rate (\$ Per MW-Month) ⁽⁴⁾	Annual EscalationLine 5	\$ 1,630.95	\$ 1,663.57	\$ 1,696.84	\$ 1,730.78	\$ 1,765.39	\$ 1,800.70	\$ 1,836.71	\$ 1,873.45	\$ 1,910.92	\$ 1,949.14
24	Ancillary Services Rate (\$ Per MW-Month) ⁽⁴⁾	Annual EscalationLine 5	\$ 7.51	\$ 7.66	\$ 7.81	\$ 7.97	\$ 8.13	\$ 8.29	\$ 8.46	\$ 8.63	\$ 8.80	\$ 8.98
25	Monthly Local Transmission Benefits	Line 22 x (Line 23 + Line 24)	\$ 801	\$ 813	\$ 825	\$ 837	\$ 850	\$ 862	\$ 875	\$ 888	\$ 901	\$ 914
26	Annual Local Transmission Benefits	Line 25 x 12	\$ 9,614	\$ 9,758	\$ 9,903	\$ 10,050	\$ 10,199	\$ 10,350	\$ 10,503	\$ 10,657	\$ 10,814	\$ 10,973
27												
28	Regional Transmission Benefits											
29	PV Capacity at Monthly Peak		9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%
30	Capacity at Peak Hour (kW-Month)	Line 3 x Line 29 x 1000	489	487	484	482	479	477	474	472	469	467
31	ISO NE Section 4ASchedule 1 Rate (\$ kW-Month) (5)	Annual EscalationLine 5	\$ 0.2048	\$ 0.2088	\$ 0.2130	\$ 0.2173	\$ 0.2216	\$ 0.2261	\$ 0.2306	\$ 0.2352	\$ 0.2399	\$ 0.2447
32	ISO NE Section 4ASchedule 5 Rate (\$ kW-Month) (6)	Annual EscalationLine 5	\$ 0.0070	\$ 0.0072	\$ 0.0073	\$ 0.0074	\$ 0.0076	\$ 0.0077	\$ 0.0079	\$ 0.0081	\$ 0.0082	\$ 0.0084
33	ISO NE Section 2Schedule 1 Rate (\$ kW-Month) (7)	Annual EscalationLine 5	\$ 0.1459	\$ 0.1489	\$ 0.1518	\$ 0.1549	\$ 0.1580	\$ 0.1611	\$ 0.1643	\$ 0.1676	\$ 0.1710	\$ 0.1744
34	ISO NE Section 2Schedule 9 Rate (\$ kW-Month) (8)	Annual EscalationLine 5	\$ 11.7453	\$ 11.9802	\$ 12.2198	\$ 12.4642	\$ 12.7135	\$ 12.9678	\$ 13.2272	\$ 13.4917	\$ 13.7615	\$ 14.0368
35	Monthly Regional Transmission Benefits	Line 30 x (Sum Lines 31 through 34)	\$ 5,918	\$ 6,007	\$ 6,096	\$ 6,186	\$ 6,278	\$ 6,371	\$ 6,465	\$ 6,560	\$ 6,657	\$ 6,755
36	Annual Regional Transmission Benefits	Line 35 x 12	\$ 71,021	\$ 72,079	\$ 73,151	\$ 74,237	\$ 75,337	\$ 76,452	\$ 77,581	\$ 78,725	\$ 79,883	\$ 81,057
37												
38	Renewable Energy Credits (REC) Savings											
39	Annual Production (MWh)	Line 9 ÷ 1000	9,400	9,353	9,306	9,259	9,212	9,165	9,118	9,071	9,024	8,977
40	REC II Rate (\$ Per MWh) ⁽⁹⁾	New England Power Pool										
41	Annual REC Savings	Line 39 x Line 40	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
42												
43	Total Direct Customer Benefits	Line 11 + Line 18 + Line 26 + Line 36 + Line 41	\$ 1,341,109	\$ 1,199,790	\$ 1,176,197	\$ 1,159,128	\$ 1,168,309	\$ 1,177,636	\$ 1,187,111	\$ 1,196,734	\$ 1,206,508	\$ 1,216,433

Notes
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 (9) NH Class II REC 2023 Term

Unitol Energy Systems d/b/a Unitol
 Benefit-Cost Analysis
 Schedule 2
 Direct Customer Benefits

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Capacity - Nameplate		4.99 MW									
2	Efficiency Rate	Decrease 0.5% annually	95.0%	94.5%	94.0%	93.5%	93.0%	92.5%	92.0%	91.5%	91.0%	90.5%
3	Capacity - Adjusted for Efficiency Rate	Line 1 x Line 2	4.74 MW	4.72 MW	4.69 MW	4.67 MW	4.64 MW	4.62 MW	4.59 MW	4.57 MW	4.54 MW	4.52 MW
4												
5	EIA Energy Outlook 2022 - Escalation Rate ⁽¹⁾	Annual Escalation Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
6												
7	Avoided Energy Costs											
8	Annual Capacity Factor		21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%
9	Annual Production (kWh)	Line 3 x Line 8 x 1000 x 365 x 24	8,929,558	8,882,561	8,835,563	8,788,565	8,741,568	8,694,570	8,647,572	8,600,575	8,553,577	8,506,579
10	Energy Rate (\$ Per kWh) ⁽²⁾	See Footnote	\$ 0.0835	\$ 0.0851	\$ 0.0868	\$ 0.0886	\$ 0.0904	\$ 0.0922	\$ 0.0940	\$ 0.0959	\$ 0.0978	\$ 0.0998
11	Annual Avoided Energy Costs	Line 9 x Line 10	\$ 745,389	\$ 756,296	\$ 767,340	\$ 778,523	\$ 789,847	\$ 801,313	\$ 812,921	\$ 824,673	\$ 836,570	\$ 848,613
12												
13	Avoided Capacity Costs											
14	PV Capacity at Annual Peak		29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%
15	Capacity at Peak Hour (kW)	Line 3 x Line 14 x 1000	1,415	1,407	1,400	1,392	1,385	1,377	1,370	1,362	1,355	1,348
16	Capacity Clearing Price (\$ kW-Month) ⁽³⁾	See Footnote	\$ 3.51	\$ 3.51	\$ 3.58	\$ 3.65	\$ 3.72	\$ 3.80	\$ 3.88	\$ 3.95	\$ 4.03	\$ 4.11
17	Monthly Avoided Capacity Costs	Line 15 x Line 16	\$ 4,965	\$ 4,939	\$ 5,011	\$ 5,084	\$ 5,158	\$ 5,233	\$ 5,309	\$ 5,385	\$ 5,463	\$ 5,542
18	Annual Avoided Capacity Costs	Line 17 x 12	\$ 59,581	\$ 59,267	\$ 60,133	\$ 61,009	\$ 61,897	\$ 62,795	\$ 63,705	\$ 64,626	\$ 65,558	\$ 66,502
19												
20	Local Transmission Benefits											
21	PV Capacity at Monthly Peak		9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%
22	Capacity at Peak Hour (MW-Month)	Line 3 x Line 21	0.46	0.46	0.46	0.46	0.45	0.45	0.45	0.45	0.44	0.44
23	Transmission Rate (\$ Per MW-Month) ⁽⁴⁾	Annual EscalationLine 5	\$ 1,988.12	\$ 2,027.88	\$ 2,068.44	\$ 2,109.81	\$ 2,152.00	\$ 2,195.04	\$ 2,238.94	\$ 2,283.72	\$ 2,329.40	\$ 2,375.99
24	Ancillary Services Rate (\$ Per MW-Month) ⁽⁴⁾	Annual EscalationLine 5	\$ 9.15	\$ 9.34	\$ 9.52	\$ 9.71	\$ 9.91	\$ 10.11	\$ 10.31	\$ 10.52	\$ 10.73	\$ 10.94
25	Monthly Local Transmission Benefits	Line 22 x (Line 23 + Line 24)	\$ 928	\$ 941	\$ 955	\$ 969	\$ 983	\$ 997	\$ 1,012	\$ 1,027	\$ 1,041	\$ 1,056
26	Annual Local Transmission Benefits	Line 25 x 12	\$ 11,134	\$ 11,297	\$ 11,462	\$ 11,629	\$ 11,798	\$ 11,969	\$ 12,143	\$ 12,318	\$ 12,496	\$ 12,676
27												
28	Regional Transmission Benefits											
29	PV Capacity at Monthly Peak		9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%
30	Capacity at Peak Hour (kW-Month)	Line 3 x Line 29 x 1000	465	462	460	457	455	452	450	447	445	443
31	ISO NE Section 4ASchedule 1 Rate (\$ kW-Month) (5)	Annual EscalationLine 5	\$ 0.2496	\$ 0.2546	\$ 0.2597	\$ 0.2649	\$ 0.2702	\$ 0.2756	\$ 0.2811	\$ 0.2867	\$ 0.2924	\$ 0.2983
32	ISO NE Section 4ASchedule 5 Rate (\$ kW-Month) (6)	Annual EscalationLine 5	\$ 0.0085	\$ 0.0087	\$ 0.0089	\$ 0.0091	\$ 0.0092	\$ 0.0094	\$ 0.0096	\$ 0.0098	\$ 0.0100	\$ 0.0102
33	ISO NE Section 2Schedule 1 Rate (\$ kW-Month) (7)	Annual EscalationLine 5	\$ 0.1779	\$ 0.1814	\$ 0.1851	\$ 0.1888	\$ 0.1926	\$ 0.1964	\$ 0.2003	\$ 0.2043	\$ 0.2084	\$ 0.2126
34	ISO NE Section 2Schedule 9 Rate (\$ kW-Month) (8)	Annual EscalationLine 5	\$ 14.3175	\$ 14.6038	\$ 14.8959	\$ 15.1938	\$ 15.4977	\$ 15.8077	\$ 16.1238	\$ 16.4463	\$ 16.7752	\$ 17.1107
35	Monthly Regional Transmission Benefits	Line 30 x (Sum Lines 31 through 34)	\$ 6,854	\$ 6,954	\$ 7,056	\$ 7,158	\$ 7,263	\$ 7,368	\$ 7,475	\$ 7,583	\$ 7,692	\$ 7,803
36	Annual Regional Transmission Benefits	Line 35 x 12	\$ 82,245	\$ 83,448	\$ 84,667	\$ 85,901	\$ 87,150	\$ 88,415	\$ 89,696	\$ 90,993	\$ 92,306	\$ 93,635
37												
38	Renewable Energy Credits (REC) Savings											
39	Annual Production (MWh)	Line 9 ÷ 1000	8,930	8,883	8,836	8,789	8,742	8,695	8,648	8,601	8,554	8,507
40	REC II Rate (\$ Per MWh) ⁽⁹⁾	New England Power Pool										
41	Annual REC Savings	Line 39 x Line 40	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
42												
43	Total Direct Customer Benefits	Line 11 + Line 18 + Line 26 + Line 36 + Line 41	\$ 1,226,510	\$ 1,236,742	\$ 1,248,308	\$ 1,260,042	\$ 1,271,945	\$ 1,284,018	\$ 1,296,263	\$ 1,308,681	\$ 1,321,274	\$ 1,334,042

Notes
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 (9) NH Class II REC 2023 Term

Unutil Energy Systems d/b/a Unutil
 Benefit-Cost Analysis
 Schedule 2
 Direct Customer Benefits

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
1	Capacity - Nameplate		4.99 MW									
2	Efficiency Rate	Decrease 0.5% annually	90.0%	89.5%	89.0%	88.5%	88.0%	87.5%	87.0%	86.5%	86.0%	85.5%
3	Capacity - Adjusted for Efficiency Rate	Line 1 x Line 2	4.49 MW	4.47 MW	4.44 MW	4.42 MW	4.39 MW	4.37 MW	4.34 MW	4.32 MW	4.29 MW	4.27 MW
4												
5	EIA Energy Outlook 2022 - Escalation Rate ⁽¹⁾	Annual Escalation Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
6												
7	Avoided Energy Costs											
8	Annual Capacity Factor		21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%	21.50%
9	Annual Production (kWh)	Line 3 x Line 8 x 1000 x 365 x 24	8,459,582	8,412,584	8,365,586	8,318,588	8,271,591	8,224,593	8,177,595	8,130,598	8,083,600	8,036,602
10	Energy Rate (\$ Per kWh) ⁽²⁾	See Footnote	\$ 0.1018	\$ 0.1038	\$ 0.1059	\$ 0.1080	\$ 0.1101	\$ 0.1123	\$ 0.1146	\$ 0.1169	\$ 0.1192	\$ 0.1216
11	Annual Avoided Energy Costs	Line 9 x Line 10	\$ 860,803	\$ 873,141	\$ 885,629	\$ 898,266	\$ 911,055	\$ 923,996	\$ 937,091	\$ 950,339	\$ 963,743	\$ 977,302
12												
13	Avoided Capacity Costs											
14	PV Capacity at Annual Peak		29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%	29.8%
15	Capacity at Peak Hour (kW)	Line 3 x Line 14 x 1000	1,340	1,333	1,325	1,318	1,310	1,303	1,295	1,288	1,281	1,273
16	Capacity Clearing Price (\$ kW-Month) ⁽³⁾	See Footnote	\$ 4.19	\$ 4.28	\$ 4.36	\$ 4.45	\$ 4.54	\$ 4.63	\$ 4.72	\$ 4.82	\$ 4.91	\$ 5.01
17	Monthly Avoided Capacity Costs	Line 15 x Line 16	\$ 5,621	\$ 5,702	\$ 5,784	\$ 5,866	\$ 5,950	\$ 6,034	\$ 6,120	\$ 6,206	\$ 6,294	\$ 6,382
18	Annual Avoided Capacity Costs	Line 17 x 12	\$ 67,457	\$ 68,424	\$ 69,402	\$ 70,393	\$ 71,395	\$ 72,409	\$ 73,435	\$ 74,474	\$ 75,524	\$ 76,587
19												
20	Local Transmission Benefits											
21	PV Capacity at Monthly Peak		9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%
22	Capacity at Peak Hour (MW-Month)	Line 3 x Line 21	0.44	0.44	0.44	0.43	0.43	0.43	0.43	0.42	0.42	0.42
23	Transmission Rate (\$ Per MW-Month) ⁽⁴⁾	Annual EscalationLine 5	\$ 2,423.51	\$ 2,471.98	\$ 2,521.42	\$ 2,571.84	\$ 2,623.28	\$ 2,675.75	\$ 2,729.26	\$ 2,783.85	\$ 2,839.52	\$ 2,896.31
24	Ancillary Services Rate (\$ Per MW-Month) ⁽⁴⁾	Annual EscalationLine 5	\$ 11.16	\$ 11.38	\$ 11.61	\$ 11.84	\$ 12.08	\$ 12.32	\$ 12.57	\$ 12.82	\$ 13.08	\$ 13.34
25	Monthly Local Transmission Benefits	Line 22 x (Line 23 + Line 24)	\$ 1,071	\$ 1,087	\$ 1,102	\$ 1,118	\$ 1,134	\$ 1,150	\$ 1,166	\$ 1,183	\$ 1,200	\$ 1,217
26	Annual Local Transmission Benefits	Line 25 x 12	\$ 12,858	\$ 13,042	\$ 13,229	\$ 13,418	\$ 13,609	\$ 13,802	\$ 13,997	\$ 14,195	\$ 14,396	\$ 14,598
27												
28	Regional Transmission Benefits											
29	PV Capacity at Monthly Peak		9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	9.8%
30	Capacity at Peak Hour (kW-Month)	Line 3 x Line 29 x 1000	440	438	435	433	430	428	425	423	421	418
31	ISO NE Section 4ASchedule 1 Rate (\$ kW-Month) (5)	Annual EscalationLine 5	\$ 0.3042	\$ 0.3103	\$ 0.3165	\$ 0.3229	\$ 0.3293	\$ 0.3359	\$ 0.3426	\$ 0.3495	\$ 0.3565	\$ 0.3636
32	ISO NE Section 4ASchedule 5 Rate (\$ kW-Month) (6)	Annual EscalationLine 5	\$ 0.0104	\$ 0.0106	\$ 0.0108	\$ 0.0111	\$ 0.0113	\$ 0.0115	\$ 0.0117	\$ 0.0120	\$ 0.0122	\$ 0.0124
33	ISO NE Section 2Schedule 1 Rate (\$ kW-Month) (7)	Annual EscalationLine 5	\$ 0.2168	\$ 0.2212	\$ 0.2256	\$ 0.2301	\$ 0.2347	\$ 0.2394	\$ 0.2442	\$ 0.2491	\$ 0.2541	\$ 0.2592
34	ISO NE Section 2Schedule 9 Rate (\$ kW-Month) (8)	Annual EscalationLine 5	\$ 17,4529	\$ 17,8020	\$ 18,1580	\$ 18,5212	\$ 18,8916	\$ 19,2695	\$ 19,6549	\$ 20,0480	\$ 20,4489	\$ 20,8579
35	Monthly Regional Transmission Benefits	Line 30 x (Sum Lines 31 through 34)	\$ 7,915	\$ 8,028	\$ 8,143	\$ 8,259	\$ 8,377	\$ 8,496	\$ 8,616	\$ 8,738	\$ 8,861	\$ 8,986
36	Annual Regional Transmission Benefits	Line 35 x 12	\$ 94,980	\$ 96,341	\$ 97,719	\$ 99,113	\$ 100,524	\$ 101,952	\$ 103,397	\$ 104,859	\$ 106,338	\$ 107,834
37												
38	Renewable Energy Credits (REC) Savings											
39	Annual Production (MWh)	Line 9 ÷ 1000	8,460	8,413	8,366	8,319	8,272	8,225	8,178	8,131	8,084	8,037
40	REC II Rate (\$ Per MWh) ⁽⁹⁾	New England Power Pool										
41	Annual REC Savings	Line 39 x Line 40										
42												
43	Total Direct Customer Benefits	Line 11 + Line 18 + Line 26 + Line 36 + Line 41	\$ 1,346,987	\$ 1,360,111	\$ 1,373,414	\$ 1,386,898	\$ 1,400,564	\$ 1,414,413	\$ 1,428,447	\$ 1,442,666	\$ 1,457,072	\$ 1,471,666

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 (9) NH Class II REC 2023 Term

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 2
 Direct Customer Benefits

Line No.	Description	Reference	Year 31	Year 32	Year 33	Year 34	Year 35	
1	Capacity - Nameplate		4.99 MW					
2	Efficiency Rate	Decrease 0.5% annually	85.0%	84.5%	84.0%	83.5%	83.0%	
3	Capacity - Adjusted for Efficiency Rate	Line 1 x Line 2	4.24 MW	4.22 MW	4.19 MW	4.17 MW	4.14 MW	
4								
5	EIA Energy Outlook 2022 - Escalation Rate ⁽¹⁾	Annual Escalation Rate	2.00%	2.00%	2.00%	2.00%	2.00%	
6								
7	Avoided Energy Costs							
8	Annual Capacity Factor		21.50%	21.50%	21.50%	21.50%	21.50%	
9	Annual Production (kWh)	Line 3 x Line 8 x 1000 x 365 x 24	7,989,605	7,942,607	7,895,609	7,848,612	7,801,614	
10	Energy Rate (\$ Per kWh) ⁽²⁾	See Footnote	\$ 0.1240	\$ 0.1265	\$ 0.1290	\$ 0.1316	\$ 0.1343	
11	Annual Avoided Energy Costs	Line 9 x Line 10	\$ 991,019	\$ 1,004,893	\$ 1,018,926	\$ 1,033,118	\$ 1,047,470	
12								
13	Avoided Capacity Costs							
14	PV Capacity at Annual Peak		29.8%	29.8%	29.8%	29.8%	29.8%	
15	Capacity at Peak Hour (kW)	Line 3 x Line 14 x 1000	1,266	1,258	1,251	1,243	1,236	
16	Capacity Clearing Price (\$ kW-Month) ⁽³⁾	See Footnote	\$ 5.11	\$ 5.22	\$ 5.32	\$ 5.43	\$ 5.53	
17	Monthly Avoided Capacity Costs	Line 15 x Line 16	\$ 6,472	\$ 6,562	\$ 6,654	\$ 6,747	\$ 6,840	
18	Annual Avoided Capacity Costs	Line 17 x 12	\$ 77,661	\$ 78,749	\$ 79,848	\$ 80,961	\$ 82,085	
19								
20	Local Transmission Benefits							
21	PV Capacity at Monthly Peak		9.8%	9.8%	9.8%	9.8%	9.8%	
22	Capacity at Peak Hour (MW-Month)	Line 3 x Line 21	0.42	0.41	0.41	0.41	0.41	
23	Transmission Rate (\$ Per MW-Month) ⁽⁴⁾	Annual EscalationLine 5	\$ 2,954.24	\$ 3,013.32	\$ 3,073.59	\$ 3,135.06	\$ 3,197.76	
24	Ancillary Services Rate (\$ Per MW-Month) ⁽⁴⁾	Annual EscalationLine 5	\$ 13.60	\$ 13.88	\$ 14.15	\$ 14.44	\$ 14.72	
25	Monthly Local Transmission Benefits	Line 22 x (Line 23 + Line 24)	\$ 1,234	\$ 1,251	\$ 1,268	\$ 1,286	\$ 1,304	
26	Annual Local Transmission Benefits	Line 25 x 12	\$ 14,803	\$ 15,010	\$ 15,220	\$ 15,432	\$ 15,646	
27								
28	Regional Transmission Benefits							
29	PV Capacity at Monthly Peak		9.8%	9.8%	9.8%	9.8%	9.8%	
30	Capacity at Peak Hour (kW-Month)	Line 3 x Line 29 x 1000	416	413	411	408	406	
31	ISO NE Section 4ASchedule 1 Rate (\$ kW-Month) (5)	Annual EscalationLine 5	\$ 0.3709	\$ 0.3783	\$ 0.3859	\$ 0.3936	\$ 0.4014	
32	ISO NE Section 4ASchedule 5 Rate (\$ kW-Month) (6)	Annual EscalationLine 5	\$ 0.0127	\$ 0.0130	\$ 0.0132	\$ 0.0135	\$ 0.0137	
33	ISO NE Section 2Schedule 1 Rate (\$ kW-Month) (7)	Annual EscalationLine 5	\$ 0.2643	\$ 0.2696	\$ 0.2750	\$ 0.2805	\$ 0.2861	
34	ISO NE Section 2Schedule 9 Rate (\$ kW-Month) (8)	Annual EscalationLine 5	\$ 21.2750	\$ 21.7005	\$ 22.1346	\$ 22.5773	\$ 23.0288	
35	Monthly Regional Transmission Benefits	Line 30 x (Sum Lines 31 through 34)	\$ 9,112	\$ 9,240	\$ 9,369	\$ 9,499	\$ 9,631	
36	Annual Regional Transmission Benefits	Line 35 x 12	\$ 109,347	\$ 110,878	\$ 112,427	\$ 113,992	\$ 115,576	
37								
38	Renewable Energy Credits (REC) Savings							
39	Annual Production (MWh)	Line 9 ÷ 1000	7,990	7,943	7,896	7,849	7,802	
40	REC II Rate (\$ Per MWh) ⁽⁹⁾	New England Power Pool						
41	Annual REC Savings	Line 39 x Line 40						
42								
43	Total Direct Customer Benefits	Line 11 + Line 18 + Line 26 + Line 36 + Line 41	\$ 1,486,449	\$ 1,501,421	\$ 1,516,584	\$ 1,531,939	\$ 1,547,487	

Notes
 (1) EIA Annual Energy Outlook 2022Table 8. End-Use PriceAll Sectors Average
 (2) Using ISO New England Futures from Year 1 through Year 4. Annual escalation beginning in Year 5
 (3) 'Avoided Energy Supply Components in New England' 2021 ReportPage 123Table 40. Counter-factual #1: 15-year Levelized Cost. Annual escalation beginning in Year 13
 (4) EversourceSchedule 21-ES (Part A) ISO-NE Transmission Markets and Services TariffRates effective January 12022
 (5) ISO New England Tariff RatesSection 4A. Recovery of ISO Administrative ExpensesSchedule 1. SchedulingSystem Control and Dispatch ServiceRates effective January 12022
 (6) ISO New England Tariff RatesSection 4A. Recovery of ISO Administrative ExpensesSchedule 3. Reliability Administration ServiceRates effective January 12022
 (7) ISO New England Tariff RatesSection 2. ISO New England Open Access Transmission Tariff (OATT)Schedule 1. SchedulingSystem Control and Dispatch ServiceRates effective June 12022. Divided by 12.
 (8) ISO New England Tariff RatesSection 2. ISO New England Open Access Transmission Tariff (OATT)Schedule 9. Regional Network Service (RNS)Rates effective January 12023. Divided by 12.
 (9) NH Class II REC 2023 Term

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 3
 Rate Base & Revenue Requirement

Line No.	Description	Reference	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Investments												
2	PV Modules	Capital Costs, Line 46											
3	Racking Equipment	Maintenance Capital Costs, Line 5											
4	Balance of Plant	Capital Costs, Line 47, Maintenance Capital Costs, Line 12											
5	Electric System Upgrades	Capital Costs, Line 48	545,000										
6	Solar Inverter 1	Capital Costs, Line 49											
7	Solar Inverter 2	Capital Costs, Line 50											
8	Solar Inverter 3	Capital Costs, Line 51											
9	Land Improvements	Capital Costs, Line 52											
10	Land Acquisition	Capital Costs, Line 56	820,438										
11	Total Investments	Capital Costs, Line 57	820,438										
12		Sum Lines 2 through 10	\$ 13,690,505	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
13	Rate Base Calculation												
14	Gross Plant ⁽¹⁾	CY Line 11 + PY Line 14	\$ 13,690,505	\$ 13,690,505	\$ 13,690,505	\$ 13,690,505	\$ 13,690,505	\$ 13,690,505	\$ 13,690,505	\$ 13,690,505	\$ 13,690,505	\$ 13,690,505	\$ 13,690,505
15	Accumulated Depreciation ⁽¹⁾	Book Depreciation Schedule, Line 51		(366,038)	(732,075)	(1,098,113)	(1,464,151)	(1,830,189)	(2,196,226)	(2,562,264)	(2,928,302)	(3,294,340)	(3,660,377)
16	Net Plant	Line 14 + Line 15	13,690,505	13,324,467	12,958,429	12,592,392	12,226,354	11,860,316	11,494,278	11,128,241	10,762,203	10,396,165	10,030,127
17	Deferred Income Tax	Deferred Tax Calculation, Line - 28		(557,704)	(1,509,164)	(2,040,618)	(2,320,068)	(2,599,518)	(2,689,966)	(2,591,410)	(2,492,854)	(2,394,299)	(2,295,743)
18	Year End Rate Base	Line 16 + Line 17	\$ 13,690,505	\$ 12,766,763	\$ 11,449,265	\$ 10,551,773	\$ 9,906,285	\$ 9,260,798	\$ 8,804,313	\$ 8,536,831	\$ 8,269,349	\$ 8,001,866	\$ 7,734,384
19													
20	Revenue Requirement												
21	Average Rate Base	(CY Line 18 + PY Line 18) ÷ 2		\$ 13,228,634	\$ 12,108,014	\$ 11,000,519	\$ 10,229,029	\$ 9,583,542	\$ 9,032,555	\$ 8,670,572	\$ 8,403,090	\$ 8,135,608	\$ 7,868,125
22	Pre-Tax Rate of Return	Cost of Capital, Line 8, Column (f)		9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	
23	Return and Taxes	Line 21 x Line 22	\$ 1,214,640	\$ 1,111,746	\$ 1,010,057	\$ 939,219	\$ 879,951	\$ 829,360	\$ 796,123	\$ 771,563	\$ 747,003	\$ 722,443	
24	Operations & Maintenance	O&M Expense, Line 9											
25	Decommissioning Cost	Decommissioning Expense, Line 4											
26	Book Depreciation	Book Depreciation Schedule, Line 50		366,038	366,038	366,038	366,038	366,038	366,038	366,038	366,038	366,038	
27	Property Taxes	Property Tax Expense, Line 4		371,486	361,281	351,076	340,871	330,666	320,460	310,255	300,050	289,845	
28	PTC Flowback with Grossup	Production Tax Credit, Line - 10		(368,019)	(373,503)	(379,058)	(384,687)	(390,389)	(396,165)	(402,016)	(407,943)	(413,946)	
29	Annual Revenue Requirement	Sum Lines 23 through 28	\$ 1,609,144	\$ 1,491,062	\$ 1,374,122	\$ 1,287,971	\$ 1,213,326	\$ 1,193,796	\$ 1,146,218	\$ 1,107,281	\$ 1,068,308	\$ 1,029,301	

Notes
 (1) Beginning in Year 15 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 1
 Beginning in Year 30 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 2

Unitol Energy Systems d/b/a Unitol
 Benefit-Cost Analysis
 Schedule 3
 Rate Base & Revenue Requirement

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Investments											
2	PV Modules	Capital Costs, Line 46	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3	Racking Equipment	Maintenance Capital Costs, Line 5										
4	Balance of Plant	Capital Costs, Line 47, Maintenance Capital Costs, Line 12										
5	Electric System Upgrades	Capital Costs, Line 48										
6	Solar Inverter 1	Capital Costs, Line 49										
7	Solar Inverter 2	Capital Costs, Line 50										
8	Solar Inverter 3	Capital Costs, Line 51										
9	Land Improvements	Capital Costs, Line 52										
10	Land Acquisition	Capital Costs, Line 56										
11	Total Investments	Capital Costs, Line 57										
12		Sum Lines 2 through 10										
13	Rate Base Calculation											
14	Gross Plant ⁽¹⁾	CY Line 11 + PY Line 14	\$ 13,706,035	\$ 13,721,875	\$ 13,738,033	\$ 13,754,513	\$ 13,933,321	\$ 13,950,467	\$ 13,967,956	\$ 13,985,795	\$ 14,003,991	\$ 14,022,551
15	Accumulated Depreciation ⁽¹⁾	Book Depreciation Schedule, Line 51	(4,026,415)	(4,392,897)	(4,759,831)	(5,127,226)	(5,026,713)	(5,437,085)	(5,816,721)	(6,196,857)	(6,577,503)	(6,958,669)
16	Net Plant	Line 14 + Line 15	9,679,620	9,328,979	8,978,202	8,627,287	8,906,608	8,513,383	8,151,235	7,788,938	7,426,488	7,063,882
17	Deferred Income Tax	Deferred Tax Calculation, Line - 28	(2,198,024)	(2,101,540)	(2,005,780)	(1,910,439)	(1,815,525)	(1,743,435)	(1,700,077)	(1,634,951)	(1,556,744)	(1,478,493)
18	Year End Rate Base	Line 16 + Line 17	\$ 7,481,596	\$ 7,227,439	\$ 6,972,422	\$ 6,716,848	\$ 7,091,084	\$ 6,769,948	\$ 6,451,158	\$ 6,153,987	\$ 5,869,744	\$ 5,585,389
19												
20	Revenue Requirement											
21	Average Rate Base	(CY Line 18 + PY Line 18) ÷ 2	\$ 7,607,990	\$ 7,354,518	\$ 7,099,930	\$ 6,844,635	\$ 6,903,966	\$ 6,930,516	\$ 6,610,553	\$ 6,302,573	\$ 6,011,865	\$ 5,727,566
22	Pre-Tax Rate of Return	Cost of Capital, Line 8, Column (f)	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%
23	Return and Taxes	Line 21 x Line 22	\$ 698,558	\$ 675,284	\$ 651,908	\$ 628,467	\$ 633,915	\$ 636,353	\$ 606,974	\$ 578,696	\$ 552,003	\$ 525,899
24	Operations & Maintenance	O&M Expense, Line 9										
25	Decommissioning Cost	Decommissioning Expense, Line 4										
26	Book Depreciation	Book Depreciation Schedule, Line 50	366,038	366,481	366,934	367,396	367,867	410,372	379,637	380,136	380,646	381,166
27	Property Taxes	Property Tax Expense, Line 4	269,868	260,092	250,312	240,529	248,316	237,353	227,256	217,156	207,050	196,941
28	PTC Flowback with Grossup	Production Tax Credit, Line - 10	-	-	-	-	-	-	-	-	-	-
29	Annual Revenue Requirement	Sum Lines 23 through 28	\$ 1,417,550	\$ 1,386,869	\$ 1,356,136	\$ 1,325,389	\$ 1,341,158	\$ 1,377,250	\$ 1,309,200	\$ 1,273,532	\$ 1,239,508	\$ 1,206,131

Notes
 (1) Beginning in Year 15 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 1
 Beginning in Year 30 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 2

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 3
 Rate Base & Revenue Requirement

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
1	Investments											
2	PV Modules	Capital Costs, Line 46	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3	Racking Equipment	Maintenance Capital Costs, Line 5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4	Balance of Plant	Capital Costs, Line 47, Maintenance Capital Costs, Line 12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
5	Electric System Upgrades	Capital Costs, Line 48										
6	Solar Inverter 1	Capital Costs, Line 49										
7	Solar Inverter 2	Capital Costs, Line 50										
8	Solar Inverter 3	Capital Costs, Line 51										
9	Land Improvements	Capital Costs, Line 52										
10	Land Acquisition	Capital Costs, Line 56										
11	Total Investments	Capital Costs, Line 57										
12		Sum Lines 2 through 10										
13	Rate Base Calculation											
14	Gross Plant ⁽¹⁾	CY Line 11 + PY Line 14	\$ 14,060,413	\$ 14,099,032	\$ 14,138,423	\$ 14,178,602	\$ 14,219,585	\$ 14,261,388	\$ 14,304,026	\$ 14,347,517	\$ 14,391,878	\$ 14,655,155
15	Accumulated Depreciation ⁽¹⁾	Book Depreciation Schedule, Line 51	(7,340,365)	(7,723,143)	(8,107,025)	(8,492,031)	(8,878,186)	(9,265,512)	(9,654,032)	(10,043,770)	(10,434,751)	(10,196,621)
16	Net Plant	Line 14 + Line 15	6,720,047	6,375,888	6,031,399	5,686,571	5,341,399	4,995,876	4,649,994	4,303,747	3,957,128	4,458,533
17	Deferred Income Tax	Deferred Tax Calculation, Line - 28	(1,391,438)	(1,296,065)	(1,201,528)	(1,107,451)	(1,013,844)	(920,423)	(826,897)	(733,265)	(639,525)	(545,674)
18	Year End Rate Base	Line 16 + Line 17	\$ 5,328,610	\$ 5,079,824	\$ 4,829,871	\$ 4,579,120	\$ 4,327,555	\$ 4,075,453	\$ 3,823,097	\$ 3,570,482	\$ 3,317,603	\$ 3,912,860
19												
20	Revenue Requirement											
21	Average Rate Base	(CY Line 18 + PY Line 18) ÷ 2	\$ 5,456,999	\$ 5,204,217	\$ 4,954,847	\$ 4,704,496	\$ 4,453,338	\$ 4,201,504	\$ 3,949,275	\$ 3,696,790	\$ 3,444,043	\$ 3,615,231
22	Pre-Tax Rate of Return	Cost of Capital, Line 8, Column (f)	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%
23	Return and Taxes	Line 21 x Line 22	\$ 501,056	\$ 477,846	\$ 454,949	\$ 431,962	\$ 408,901	\$ 385,778	\$ 362,618	\$ 339,435	\$ 316,228	\$ 331,947
24	Operations & Maintenance	O&M Expense, Line 9										
25	Decommissioning Cost	Decommissioning Expense, Line 4										
26	Book Depreciation	Book Depreciation Schedule, Line 50	381,696	382,778	383,881	385,007	386,155	387,326	388,520	389,738	390,981	392,248
27	Property Taxes	Property Tax Expense, Line 4	187,355	177,760	168,155	158,542	148,918	139,285	129,642	119,988	110,325	124,304
28	PTC Flowback with Grossup	Production Tax Credit, Line - 10	-	-	-	-	-	-	-	-	-	-
29	Annual Revenue Requirement	Sum Lines 23 through 28	\$ 1,174,603	\$ 1,145,306	\$ 1,116,392	\$ 1,087,458	\$ 1,058,523	\$ 1,029,601	\$ 1,000,718	\$ 971,889	\$ 943,116	\$ 977,003

Notes
 (1) Beginning in Year 15 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 1
 Beginning in Year 30 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 2

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 3
 Rate Base & Revenue Requirement

Line No.	Description	Reference	Year 31	Year 32	Year 33	Year 34	Year 35
1	Investments						
2	PV Modules	Capital Costs, Line 46					
3	Racking Equipment	Maintenance Capital Costs, Line 5					
4	Balance of Plant	Capital Costs, Line 47					
5	Electric System Upgrades	Maintenance Capital Costs, Line 12					
6	Solar Inverter 1	Capital Costs, Line 48					
7	Solar Inverter 2	Capital Costs, Line 49					
8	Solar Inverter 3	Capital Costs, Line 50					
9	Land Improvements	Capital Costs, Line 51					
10	Land Acquisition	Capital Costs, Line 52					
11	Total Investments	Capital Costs, Line 56					
12		Capital Costs, Line 57					
13		Sum Lines 2 through 10	\$				
13	Rate Base Calculation						
14	Gross Plant ⁽¹⁾	CY Line 11 + PY Line 14	\$ 14,785,922	\$ 14,919,305	\$ 15,055,356	\$ 15,194,127	\$ 15,335,675
15	Accumulated Depreciation ⁽¹⁾	Book Depreciation Schedule, Line 51	(10,604,697)	(11,016,510)	(11,432,133)	(11,851,644)	(12,275,120)
16	Net Plant	Line 14 + Line 15	4,181,225	3,902,795	3,623,222	3,342,483	3,060,555
17	Deferred Income Tax	Deferred Tax Calculation, Line - 28	(498,039)	(484,433)	(445,418)	(391,018)	(338,820)
18	Year End Rate Base	Line 16 + Line 17	\$ 3,683,185	\$ 3,418,363	\$ 3,177,805	\$ 2,951,465	\$ 2,721,735
19							
20	Revenue Requirement						
21	Average Rate Base	(CY Line 18 + PY Line 18) ÷ 2	\$ 3,798,023	\$ 3,550,774	\$ 3,298,084	\$ 3,064,635	\$ 2,836,600
22	Pre-Tax Rate of Return	Cost of Capital, Line 8, Column (f)	9.18%	9.18%	9.18%	9.18%	9.18%
23	Return and Taxes	Line 21 x Line 22	\$ 348,731	\$ 326,028	\$ 302,827	\$ 281,392	\$ 260,454
24	Operations & Maintenance	O&M Expense, Line 9					
25	Decommissioning Cost	Decommissioning Expense, Line 4					
26	Book Depreciation	Book Depreciation Schedule, Line 50	408,076	411,813	415,623	419,511	423,476
27	Property Taxes	Property Tax Expense, Line 4	116,573	108,810	101,015	93,188	85,328
28	PTC Flowback with Grossup	Production Tax Credit, Line - 10					
29	Annual Revenue Requirement	Sum Lines 23 through 28	\$ 1,004,874	\$ 981,206	\$ 957,154	\$ 934,985	\$ 913,434

Notes
 (1) Beginning in Year 15 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 1
 Beginning in Year 30 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 2

Unitil Energy Systems d/b/a Unitil
Benefit-Cost Analysis
Schedule 4
Production Tax Credit

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Production Tax Credit											
2	Annual Production (kWh)	Direct Customer Benefits, Line 9	9,399,535	9,352,537	9,305,540	9,258,542	9,211,544	9,164,547	9,117,549	9,070,551	9,023,554	8,976,556
3	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
4	PTC Base Credit (per kWh) ⁽¹⁾	0.0275 Escalated at Annal Rate	\$ 0.0286	\$ 0.0292	\$ 0.0298	\$ 0.0304	\$ 0.0310	\$ 0.0316	\$ 0.0322	\$ 0.0329	\$ 0.0335	\$ 0.0342
5	PTC Base Credit (Annual)	Line 2 x Line 4	\$ 268,930	\$ 272,937	\$ 276,997	\$ 281,110	\$ 285,277	\$ 289,498	\$ 293,773	\$ 298,104	\$ 302,491	\$ 306,934
6												
7	Tax Gross Up											
8	Production Tax Credit Tax Gross Up	Line 5 x 0.368457	\$ 99,089	\$ 100,566	\$ 102,061	\$ 103,577	\$ 105,112	\$ 106,667	\$ 108,243	\$ 109,839	\$ 111,455	\$ 113,092
9												
10	Total PTC Flowback with Gross Up	Line 5 + Line 8	\$ 368,019	\$ 373,503	\$ 379,058	\$ 384,687	\$ 390,389	\$ 396,165	\$ 402,016	\$ 407,943	\$ 413,946	\$ 420,025

Notes

(1) The Internal Revenue Service published a 2022 PTC Rate of 2.75 cents per kWh. Year 1 (2024) is the future value of the current PTC rate of 2.75 cents per kWh with 2% annual escalation rate. This does not include the 10% Bonus Credit for Domestic Content qualification

Unitil Energy Systems d/b/a Unitil
Benefit-Cost Analysis
Schedule 4
Production Tax Credit

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	<u>Production Tax Credit</u>											
2	Annual Production (kWh)	Direct Customer Benefits, Line 9	8,929,558	8,882,561	8,835,563	8,788,565	8,741,568	8,694,570	8,647,572	8,600,575	8,553,577	8,506,579
3	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
4	PTC Base Credit (per kWh) ⁽¹⁾	0.0275 Escalated at Annal Rate										
5	PTC Base Credit (Annual)	Line 2 x Line 4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6												
7	<u>Tax Gross Up</u>											
8	Production Tax Credit Tax Gross Up	Line 5 x 0.368457	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9												
10	Total PTC Flowback with Gross Up	Line 5 + Line 8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Notes

(1) The Internal Revenue Service published a 2022 PTC Rate of 2.75 cents per kWh. Year 1 (2024) is the future value of the current PTC rate of 2.75 cents per kWh with 2% annual escalation rate. This does not include the 10% Bonus Credit for Domestic Content qualification

Unitil Energy Systems d/b/a Unitil
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Schedule 4
Production Tax Credit

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
1	<u>Production Tax Credit</u>											
2	Annual Production (kWh)	Direct Customer Benefits, Line 9	8,459,582	8,412,584	8,365,586	8,318,588	8,271,591	8,224,593	8,177,595	8,130,598	8,083,600	8,036,602
3	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
4	PTC Base Credit (per kWh) ⁽¹⁾	0.0275 Escalated at Annal Rate										
5	PTC Base Credit (Annual)	Line 2 x Line 4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6												
7	<u>Tax Gross Up</u>											
8	Production Tax Credit Tax Gross Up	Line 5 x 0.368457	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9												
10	Total PTC Flowback with Gross Up	Line 5 + Line 8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Notes

(1) The Internal Revenue Service published a 2022 PTC Rate of 2.75 cents per kWh. Year 1 (2024) is the future value of the current PTC rate of 2.75 cents per kWh with 2% annual escalation rate. This does not include the 10% Bonus Credit for Domestic Content qualification

Unitil Energy Systems d/b/a Unitil
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Schedule 4
Production Tax Credit

Line No.	Description	Reference	Year 31	Year 32	Year 33	Year 34	Year 35
1	<u>Production Tax Credit</u>						
2	Annual Production (kWh)	Direct Customer Benefits, Line 9	7,989,605	7,942,607	7,895,609	7,848,612	7,801,614
3	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%
4	PTC Base Credit (per kWh) ⁽¹⁾	0.0275 Escalated at Annal Rate					
5	PTC Base Credit (Annual)	Line 2 x Line 4	\$ -	\$ -	\$ -	\$ -	\$ -
6							
7	<u>Tax Gross Up</u>						
8	Production Tax Credit Tax Gross Up	Line 5 x 0.368457	\$ -	\$ -	\$ -	\$ -	\$ -
9							
10	Total PTC Flowback with Gross Up	Line 5 + Line 8	\$ -	\$ -	\$ -	\$ -	\$ -

Notes

(1) The Internal Revenue Service published a 2022 PTC Rate of 2.75 cents per kWh. Year 1 (2024) is the future value of the current PTC rate of 2.75 cents per kWh with 2% annual escalation rate. This does not include the 10% Bonus Credit for Domestic Content qualification

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 5a
 O&M Expense

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	<u>Vegetation Management Expense</u>		\$ [REDACTED]									
2	Annual Escalation Rate	2% Annual Escalation		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
3	Total Vegetation Management Expense	Prior Year Escalated at Annual Rate	\$ [REDACTED]	[REDACTED]								
4												
5	<u>Additional Maintenance Expense</u>							[REDACTED]				
6	Annual Escalation Rate	2.5% Annual Escalation							2.5%	2.5%	2.5%	2.5%
7	Total Additional Maintenance Expense	Prior Year Escalated at Annual Rate						[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
8												
9	O&M Expense	Line 3 + Line 7	\$ [REDACTED]	[REDACTED]								

Notes

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 5a
 O&M Expense

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	<u>Vegetation Management Expense</u>											
2	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
3	Total Vegetation Management Expense	Prior Year Escalated at Annual Rate	\$									
4												
5	<u>Additional Maintenance Expense</u>											
6	Annual Escalation Rate	2.5% Annual Escalation	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
7	Total Additional Maintenance Expense	Prior Year Escalated at Annual Rate										
8												
9	O&M Expense	Line 3 + Line 7	\$									

Notes

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 5a
 O&M Expense

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
1	<u>Vegetation Management Expense</u>											
2	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
3	Total Vegetation Management Expense	Prior Year Escalated at Annual Rate	\$									
4												
5	<u>Additional Maintenance Expense</u>											
6	Annual Escalation Rate	2.5% Annual Escalation	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
7	Total Additional Maintenance Expense	Prior Year Escalated at Annual Rate										
8												
9	O&M Expense	Line 3 + Line 7	\$									

Notes

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 5a
 O&M Expense

Line No.	Description	Reference	Year 31	Year 32	Year 33	Year 34	Year 35
1	<u>Vegetation Management Expense</u>						
2	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%
3	Total Vegetation Management Expense	Prior Year Escalated at Annual Rate	\$ [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
4							
5	<u>Additional Maintenance Expense</u>						
6	Annual Escalation Rate	2.5% Annual Escalation	2.5%	2.5%	2.5%	2.5%	2.5%
7	Total Additional Maintenance Expense	Prior Year Escalated at Annual Rate	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
8							
9	O&M Expense	Line 3 + Line 7	\$ [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Notes

Unitil Energy Systems d/b/a Unitil
Benefit-Cost Analysis
Schedule 5b
Decommissioning Expense

Line No.	Description	Reference	Year 31	Year 32	Year 33	Year 34	Year 35
1	Decommissioning Expense in Year 1 Dollars						
2	Annual Escalation Rate	2% Annual Escalation					
3	Future Value of Decommissioning Expense	Future Value of Line 1					
4	Straight-Lined Decommissioning Expense	Line 3 Straight-lined Across Facility Life	\$ -	\$ -	\$ -	\$ -	\$ -

Unitil Energy Systems d/b/a Unitil
Benefit-Cost Analysis
Schedule 6
Property Tax Expense

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	<u>Property Tax Expense</u>											
2	Net Plant	Rate Base & Revenue Requirement, Line 16	\$ 13,324,467	\$ 12,958,429	\$ 12,592,392	\$ 12,226,354	\$ 11,860,316	\$ 11,494,278	\$ 11,128,241	\$ 10,762,203	\$ 10,396,165	\$ 10,030,127
3	Property Tax Rate per \$1000	Kingston, NH Rate of \$21.28 + NH State Rate \$6.60	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88
4	Annual Property Tax	Line 2 x (Line 3 ÷ 1000)	\$ 371,486	\$ 361,281	\$ 351,076	\$ 340,871	\$ 330,666	\$ 320,460	\$ 310,255	\$ 300,050	\$ 289,845	\$ 279,640

Unitil Energy Systems d/b/a Unitil
Benefit-Cost Analysis
Schedule 6
Property Tax Expense

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	<u>Property Tax Expense</u>											
2	Net Plant	Rate Base & Revenue Requirement, Line 16	\$ 9,679,620	\$ 9,328,979	\$ 8,978,202	\$ 8,627,287	\$ 8,906,608	\$ 8,513,383	\$ 8,151,235	\$ 7,788,938	\$ 7,426,488	\$ 7,063,882
3	Property Tax Rate per \$1000	Kingston, NH Rate of \$21.28 + NH State Rate \$6.60	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88
4	Annual Property Tax	Line 2 x (Line 3 ÷ 1000)	\$ 269,868	\$ 260,092	\$ 250,312	\$ 240,529	\$ 248,316	\$ 237,353	\$ 227,256	\$ 217,156	\$ 207,050	\$ 196,941

Unitil Energy Systems d/b/a Unitil
Benefit-Cost Analysis
Schedule 6
Property Tax Expense

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
1	<u>Property Tax Expense</u>											
2	Net Plant	Rate Base & Revenue Requirement, Line 16	\$ 6,720,047	\$ 6,375,888	\$ 6,031,399	\$ 5,686,571	\$ 5,341,399	\$ 4,995,876	\$ 4,649,994	\$ 4,303,747	\$ 3,957,128	\$ 4,458,533
3	Property Tax Rate per \$1000	Kingston, NH Rate of \$21.28 + NH State Rate \$6.60	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88
4	Annual Property Tax	Line 2 x (Line 3 ÷ 1000)	\$ 187,355	\$ 177,760	\$ 168,155	\$ 158,542	\$ 148,918	\$ 139,285	\$ 129,642	\$ 119,988	\$ 110,325	\$ 124,304

Unitil Energy Systems d/b/a Unitil
Benefit-Cost Analysis
Schedule 6
Property Tax Expense

Line No.	Description	Reference	Year 31	Year 32	Year 33	Year 34	Year 35
1	<u>Property Tax Expense</u>						
2	Net Plant	Rate Base & Revenue Requirement, Line 16	\$ 4,181,225	\$ 3,902,795	\$ 3,623,222	\$ 3,342,483	\$ 3,060,555
3	Property Tax Rate per \$1000	Kingston, NH Rate of \$21.28 + NH State Rate \$6.60	27.88	27.88	27.88	27.88	27.88
4	Annual Property Tax	Line 2 x (Line 3 ÷ 1000)	<u>\$ 116,573</u>	<u>\$ 108,810</u>	<u>\$ 101,015</u>	<u>\$ 93,188</u>	<u>\$ 85,328</u>

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 7
 Deferred Tax Calculation

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
1	<u>Deferred Tax Calculation</u>												
2	Annual Federal Tax Depreciation	Tax Depreciation Schedule, Line 32, Tax Depreciation Schedule - Maintenance Capital Cost, Line 87	\$										
3	Cumulative Federal Tax Depreciation	CY Line 2 + PY Line 3	\$										
4													
5	Total Annual State Tax Depreciation	Tax Depreciation Schedule, Line 34, Tax Depreciation Schedule - Maintenance Capital Cost, Line 88	\$										
6	Cumulative State Tax Depreciation	CY Line 5 + PY Line 6	\$										
7													
8	Book Depreciation: PV Modules	Book Depreciation Schedule, Line 5	\$										
9	Book Depreciation: Racking Equipment	Book Depreciation Schedule, Line 12											
10	Book Depreciation: Balance of Plant	Book Depreciation Schedule, Line 19											
11	Book Depreciation: Electric System Upgrades	Book Depreciation Schedule, Line 26											
12	Book Depreciation: Solar Inverter 1	Book Depreciation Schedule, Line 33											
13	Book Depreciation: Solar Inverter 2	Book Depreciation Schedule, Line 40											
14	Book Depreciation: Solar Inverter 3	Book Depreciation Schedule, Line 47											
15	Total Book Depreciation	Sum Lines 8 through 13											
16	Cumulative Book Depreciation	CY Line 15 + PY Line 16	\$										
17													
18	Cumulative Book / Tax Timer	Line 3 - Line 16	\$										
19	Federal Tax Rate	Cost of Capital, Line 14 Column (a)											
20	Deferred Federal Tax Reserve	Line 18 x Line 19											
21	Less: Federal Deduction for Deferred State Tax	Line 19 x - Line 26											
22	Net Deferred Federal Tax Reserve	Line 20 + Line 21	\$										
23													
24	Cumulative Book / Tax Timer	Line 6 - Line 16	\$										
25	State Tax Rate	Cost of Capital, Line 12 Column (a)											
26	Deferred State Tax Reserve	Line 24 x Line 25	\$										
27													
28	Total Deferred Taxes	Line 22 + Line 26	\$	557,704	1,509,164	2,040,618	2,320,068	2,599,518	2,689,966	2,591,410	2,492,854	2,394,299	2,295,743

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 7
 Deferred Tax Calculation

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	<u>Deferred Tax Calculation</u>											
2	Annual Federal Tax Depreciation	Tax Depreciation Schedule, Line 32, Tax Depreciation Schedule - Maintenance Capital Cost, Line 87	\$									
3	Cumulative Federal Tax Depreciation	CY Line 2 + PY Line 3										
4												
5	Total Annual State Tax Depreciation	Tax Depreciation Schedule, Line 34, Tax Depreciation Schedule - Maintenance Capital Cost, Line 88										
6	Cumulative State Tax Depreciation	CY Line 5 + PY Line 6										
7												
8	Book Depreciation: PV Modules	Book Depreciation Schedule, Line 5										
9	Book Depreciation: Racking Equipment	Book Depreciation Schedule, Line 12										
10	Book Depreciation: Balance of Plant	Book Depreciation Schedule, Line 19										
11	Book Depreciation: Electric System Upgrades	Book Depreciation Schedule, Line 26	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571
12	Book Depreciation: Solar Inverter 1	Book Depreciation Schedule, Line 33										
13	Book Depreciation: Solar Inverter 2	Book Depreciation Schedule, Line 40										
14	Book Depreciation: Solar Inverter 3	Book Depreciation Schedule, Line 47										
15	Total Book Depreciation	Sum Lines 8 through 13										
16	Cumulative Book Depreciation	CY Line 15 + PY Line 16	\$									
17												
18	Cumulative Book / Tax Timer	Line 3 - Line 16										
19	Federal Tax Rate	Cost of Capital, Line 14 Column (a)	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%
20	Deferred Federal Tax Reserve	Line 18 x Line 19										
21	Less: Federal Deduction for Deferred State Tax	Line 19 x - Line 26										
22	Net Deferred Federal Tax Reserve	Line 20 + Line 21										
23												
24	Cumulative Book / Tax Timer	Line 6 - Line 16										
25	State Tax Rate	Cost of Capital, Line 12 Column (a)	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
26	Deferred State Tax Reserve	Line 24 x Line 25	\$									
27												
28	Total Deferred Taxes	Line 22 + Line 26	\$ 2,198,024	\$ 2,101,540	\$ 2,005,780	\$ 1,910,439	\$ 1,815,525	\$ 1,743,435	\$ 1,700,077	\$ 1,634,951	\$ 1,556,744	\$ 1,478,493

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 7
 Deferred Tax Calculation

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
1	<u>Deferred Tax Calculation</u>											
2	Annual Federal Tax Depreciation	Tax Depreciation Schedule, Line 32, Tax Depreciation Schedule - Maintenance Capital Cost, Line 87	\$									
3	Cumulative Federal Tax Depreciation	CY Line 2 + PY Line 3										
4												
5	Total Annual State Tax Depreciation	Tax Depreciation Schedule, Line 34, Tax Depreciation Schedule - Maintenance Capital Cost, Line 88										
6	Cumulative State Tax Depreciation	CY Line 5 + PY Line 6										
7												
8	Book Depreciation: PV Modules	Book Depreciation Schedule, Line 5										
9	Book Depreciation: Racking Equipment	Book Depreciation Schedule, Line 12										
10	Book Depreciation: Balance of Plant	Book Depreciation Schedule, Line 19										
11	Book Depreciation: Electric System Upgrades	Book Depreciation Schedule, Line 26	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571
12	Book Depreciation: Solar Inverter 1	Book Depreciation Schedule, Line 33										
13	Book Depreciation: Solar Inverter 2	Book Depreciation Schedule, Line 40										
14	Book Depreciation: Solar Inverter 3	Book Depreciation Schedule, Line 47										
15	Total Book Depreciation	Sum Lines 8 through 13										
16	Cumulative Book Depreciation	CY Line 15 + PY Line 16	\$									
17												
18	Cumulative Book / Tax Timer	Line 3 - Line 16										
19	Federal Tax Rate	Cost of Capital, Line 14 Column (a)	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%
20	Deferred Federal Tax Reserve	Line 18 x Line 19										
21	Less: Federal Deduction for Deferred State Tax	Line 19 x - Line 26										
22	Net Deferred Federal Tax Reserve	Line 20 + Line 21										
23												
24	Cumulative Book / Tax Timer	Line 6 - Line 16										
25	State Tax Rate	Cost of Capital, Line 12 Column (a)	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
26	Deferred State Tax Reserve	Line 24 x Line 25	\$									
27												
28	Total Deferred Taxes	Line 22 + Line 26	\$ 1,391,438	\$ 1,296,065	\$ 1,201,528	\$ 1,107,451	\$ 1,013,844	\$ 920,423	\$ 826,897	\$ 733,265	\$ 639,525	\$ 545,674

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 7
 Deferred Tax Calculation

Line No.	Description	Reference	Year 31	Year 32	Year 33	Year 34	Year 35
1	<u>Deferred Tax Calculation</u>						
2	Annual Federal Tax Depreciation	Tax Depreciation Schedule, Line 32, Tax Depreciation Schedule - Maintenance Capital Cost, Line 87	\$ [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
3	Cumulative Federal Tax Depreciation	CY Line 2 + PY Line 3	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
4							
5	Total Annual State Tax Depreciation	Tax Depreciation Schedule, Line 34, Tax Depreciation Schedule - Maintenance Capital Cost, Line 88	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
6	Cumulative State Tax Depreciation	CY Line 5 + PY Line 6	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
7							
8	Book Depreciation: PV Modules	Book Depreciation Schedule, Line 5	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
9	Book Depreciation: Racking Equipment	Book Depreciation Schedule, Line 12	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
10	Book Depreciation: Balance of Plant	Book Depreciation Schedule, Line 19	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
11	Book Depreciation: Electric System Upgrades	Book Depreciation Schedule, Line 26	15,571	15,571	15,571	15,571	15,571
12	Book Depreciation: Solar Inverter 1	Book Depreciation Schedule, Line 33	-	-	-	-	-
13	Book Depreciation: Solar Inverter 2	Book Depreciation Schedule, Line 40	-	-	-	-	-
14	Book Depreciation: Solar Inverter 3	Book Depreciation Schedule, Line 47	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
15	Total Book Depreciation	Sum Lines 8 through 13	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
16	Cumulative Book Depreciation	CY Line 15 + PY Line 16	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
17							
18	Cumulative Book / Tax Timer	Line 3 - Line 16	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
19	Federal Tax Rate	Cost of Capital, Line 14 Column (a)	21.00%	21.00%	21.00%	21.00%	21.00%
20	Deferred Federal Tax Reserve	Line 18 x Line 19	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
21	Less: Federal Deduction for Deferred State Tax	Line 19 x - Line 26	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
22	Net Deferred Federal Tax Reserve	Line 20 + Line 21	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
23							
24	Cumulative Book / Tax Timer	Line 6 - Line 16	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
25	State Tax Rate	Cost of Capital, Line 12 Column (a)	7.50%	7.50%	7.50%	7.50%	7.50%
26	Deferred State Tax Reserve	Line 24 x Line 25	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
27							
28	Total Deferred Taxes	Line 22 + Line 26	\$ 498,039	\$ 484,433	\$ 445,418	\$ 391,018	\$ 338,820

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 8
 Book Depreciation Schedule

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	<u>35 Year Property</u>											
2	PV Modules	Capital Costs, Line 46	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
3	Cumulative Capital Investment	CY Line 2 + PY Line 3										
4	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
5	Annual Book Depreciation	Line 3 x Line 4										
6	Cumulative Book Depreciation	CY Line 5 + PY Line 6	\$									
7												
8	<u>35 Year Property</u>											
9	Racking Equipment	Capital Costs, Line 47	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
10	Cumulative Capital Investment	CY Line 9 + PY Line 10										
11	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
12	Annual Book Depreciation	Line 10 x Line 11	71,372	71,372	71,372	71,372	71,372	71,372	71,372	71,372	71,372	71,372
13	Cumulative Book Depreciation	CY Line 12 + PY Line 13	\$ 71,372	\$ 142,744	\$ 214,117	\$ 285,489	\$ 356,861	\$ 428,233	\$ 499,606	\$ 570,978	\$ 642,350	\$ 713,722
14												
15	<u>35 Year Property</u>											
16	Balance of Plant	Capital Costs, Line 48	\$									
17	Cumulative Capital Investment	CY Line 16 + PY Line 17										
18	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
19	Annual Book Depreciation	Line 17 x Line 18										
20	Cumulative Book Depreciation	CY Line 19 + PY Line 20	\$									
21												
22	<u>35 Year Property</u>											
23	Electric System Upgrades	Capital Costs, Line 49	\$ 545,000									
24	Cumulative Capital Investment	CY Line 23 + PY Line 24	545,000	545,000	545,000	545,000	545,000	545,000	545,000	545,000	545,000	545,000
25	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
26	Annual Book Depreciation	Line 24 x Line 25	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571
27	Cumulative Book Depreciation	CY Line 26 + PY Line 27	\$ 15,571	\$ 31,143	\$ 46,714	\$ 62,286	\$ 77,857	\$ 93,429	\$ 109,000	\$ 124,571	\$ 140,143	\$ 155,714
28												
29	<u>15 Year Property</u>											
30	Solar Inverter 1	Capital Costs, Line 50	\$									
31	Cumulative Capital Investment	CY Line 30 + PY Line 31										
32	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%
33	Annual Book Depreciation	Line 31 x Line 32										
34	Cumulative Book Depreciation	CY Line 33 + PY Line 34	\$									
35												
36	<u>15 Year Property</u>											
37	Solar Inverter 2	Capital Costs, Line 51	\$									
38	Cumulative Capital Investment	CY Line 37 + PY Line 38										
39	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%										
40	Annual Book Depreciation	Line 38 x Line 39										
41	Cumulative Book Depreciation	CY Line 40 + PY Line 41										
42												
43	<u>15 Year Property</u>											
44	Solar Inverter 3	Capital Costs, Line 52	\$									
45	Cumulative Capital Investment	CY Line 44 + PY Line 45										
46	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%										
47	Annual Book Depreciation	Line 45 x Line 46										
48	Cumulative Book Depreciation	CY Line 47 + PY Line 48										
49												
50	Total Annual Book Depreciation	Sum Lines 5, 12, 19, 26, 33, 40, and 47	\$ 366,038	\$ 366,038	\$ 366,038	\$ 366,038	\$ 366,038	\$ 366,038	\$ 366,038	\$ 366,038	\$ 366,038	\$ 366,038
51	Total Cumulative Book Depreciation	CY Line 50 + PY Line 51	\$ 366,038	\$ 732,075	\$ 1,098,113	\$ 1,464,151	\$ 1,830,189	\$ 2,196,226	\$ 2,562,264	\$ 2,928,302	\$ 3,294,340	\$ 3,660,377

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 8
 Book Depreciation Schedule

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	<u>35 Year Property</u>											
2	PV Modules	Capital Costs, Line 46	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3	Cumulative Capital Investment	CY Line 2 + PY Line 3										
4	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
5	Annual Book Depreciation	Line 3 x Line 4										
6	Cumulative Book Depreciation	CY Line 5 + PY Line 6										
7												
8	<u>35 Year Property</u>											
9	Racking Equipment	Capital Costs, Line 47										
10	Cumulative Capital Investment	CY Line 9 + PY Line 10										
11	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
12	Annual Book Depreciation	Line 10 x Line 11										
13	Cumulative Book Depreciation	CY Line 12 + PY Line 13										
14												
15	<u>35 Year Property</u>											
16	Balance of Plant	Capital Costs, Line 48										
17	Cumulative Capital Investment	CY Line 16 + PY Line 17										
18	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
19	Annual Book Depreciation	Line 17 x Line 18										
20	Cumulative Book Depreciation	CY Line 19 + PY Line 20										
21												
22	<u>35 Year Property</u>											
23	Electric System Upgrades	Capital Costs, Line 49										
24	Cumulative Capital Investment	CY Line 23 + PY Line 24	545,000	545,000	545,000	545,000	545,000	545,000	545,000	545,000	545,000	545,000
25	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
26	Annual Book Depreciation	Line 24 x Line 25	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571
27	Cumulative Book Depreciation	CY Line 26 + PY Line 27	\$ 171,286	\$ 186,857	\$ 202,429	\$ 218,000	\$ 233,571	\$ 249,143	\$ 264,714	\$ 280,286	\$ 295,857	\$ 311,429
28												
29	<u>15 Year Property</u>											
30	Solar Inverter 1	Capital Costs, Line 50										
31	Cumulative Capital Investment	CY Line 30 + PY Line 31										
32	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	0.0%	0.0%	0.0%	0.0%
33	Annual Book Depreciation	Line 31 x Line 32										
34	Cumulative Book Depreciation	CY Line 33 + PY Line 34	\$									
35												
36	<u>15 Year Property</u>											
37	Solar Inverter 2	Capital Costs, Line 51						\$				
38	Cumulative Capital Investment	CY Line 37 + PY Line 38										
39	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%						6.7%	6.7%	6.7%	6.7%	6.7%
40	Annual Book Depreciation	Line 38 x Line 39										
41	Cumulative Book Depreciation	CY Line 40 + PY Line 41						\$				
42												
43	<u>15 Year Property</u>											
44	Solar Inverter 3	Capital Costs, Line 52										
45	Cumulative Capital Investment	CY Line 44 + PY Line 45										
46	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%										
47	Annual Book Depreciation	Line 45 x Line 46										
48	Cumulative Book Depreciation	CY Line 47 + PY Line 48										
49												
50	Total Annual Book Depreciation	Sum Lines 5, 12, 19, 26, 33, 40, and 47	\$ 366,038	\$ 366,481	\$ 366,934	\$ 367,396	\$ 367,867	\$ 410,372	\$ 379,637	\$ 380,136	\$ 380,646	\$ 381,166
51	Total Cumulative Book Depreciation	CY Line 50 + PY Line 51	\$ 4,026,415	\$ 4,392,897	\$ 4,759,831	\$ 5,127,226	\$ 5,495,093	\$ 5,905,465	\$ 6,285,101	\$ 6,665,238	\$ 7,045,884	\$ 7,427,049

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 8
 Book Depreciation Schedule

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
1	<u>35 Year Property</u>											
2	PV Modules	Capital Costs, Line 46	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3	Cumulative Capital Investment	CY Line 2 + PY Line 3										
4	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
5	Annual Book Depreciation	Line 3 x Line 4										
6	Cumulative Book Depreciation	CY Line 5 + PY Line 6										
7												
8	<u>35 Year Property</u>											
9	Racking Equipment	Capital Costs, Line 47										
10	Cumulative Capital Investment	CY Line 9 + PY Line 10										
11	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
12	Annual Book Depreciation	Line 10 x Line 11										
13	Cumulative Book Depreciation	CY Line 12 + PY Line 13										
14												
15	<u>35 Year Property</u>											
16	Balance of Plant	Capital Costs, Line 48										
17	Cumulative Capital Investment	CY Line 16 + PY Line 17										
18	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
19	Annual Book Depreciation	Line 17 x Line 18										
20	Cumulative Book Depreciation	CY Line 19 + PY Line 20										
21												
22	<u>35 Year Property</u>											
23	Electric System Upgrades	Capital Costs, Line 49										
24	Cumulative Capital Investment	CY Line 23 + PY Line 24	545,000	545,000	545,000	545,000	545,000	545,000	545,000	545,000	545,000	545,000
25	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
26	Annual Book Depreciation	Line 24 x Line 25	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571	15,571
27	Cumulative Book Depreciation	CY Line 26 + PY Line 27	\$ 327,000	\$ 342,571	\$ 358,143	\$ 373,714	\$ 389,286	\$ 404,857	\$ 420,429	\$ 436,000	\$ 451,571	\$ 467,143
28												
29	<u>15 Year Property</u>											
30	Solar Inverter 1	Capital Costs, Line 50										
31	Cumulative Capital Investment	CY Line 30 + PY Line 31										
32	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%										
33	Annual Book Depreciation	Line 31 x Line 32										
34	Cumulative Book Depreciation	CY Line 33 + PY Line 34										
35												
36	<u>15 Year Property</u>											
37	Solar Inverter 2	Capital Costs, Line 51										
38	Cumulative Capital Investment	CY Line 37 + PY Line 38										
39	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%
40	Annual Book Depreciation	Line 38 x Line 39										
41	Cumulative Book Depreciation	CY Line 40 + PY Line 41										
42												
43	<u>15 Year Property</u>											
44	Solar Inverter 3	Capital Costs, Line 52										
45	Cumulative Capital Investment	CY Line 44 + PY Line 45										
46	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%										
47	Annual Book Depreciation	Line 45 x Line 46										
48	Cumulative Book Depreciation	CY Line 47 + PY Line 48										
49												
50	Total Annual Book Depreciation	Sum Lines 5, 12, 19, 26, 33, 40, and 47	\$ 381,696	\$ 382,778	\$ 383,881	\$ 385,007	\$ 386,155	\$ 387,326	\$ 388,520	\$ 389,738	\$ 390,981	\$ 392,248
51	Total Cumulative Book Depreciation	CY Line 50 + PY Line 51	\$ 7,808,746	\$ 8,191,523	\$ 8,575,405	\$ 8,960,411	\$ 9,346,566	\$ 9,733,892	\$ 10,122,412	\$ 10,512,150	\$ 10,903,131	\$ 11,295,379

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 8
 Book Depreciation Schedule

Line No.	Description	Reference	Year 31	Year 32	Year 33	Year 34	Year 35
1	<u>35 Year Property</u>						
2	PV Modules	Capital Costs, Line 46	\$	\$	\$	\$	\$
3	Cumulative Capital Investment	CY Line 2 + PY Line 3					
4	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
5	Annual Book Depreciation	Line 3 x Line 4					
6	Cumulative Book Depreciation	CY Line 5 + PY Line 6					
7							
8	<u>35 Year Property</u>						
9	Racking Equipment	Capital Costs, Line 47	\$	\$	\$	\$	\$
10	Cumulative Capital Investment	CY Line 9 + PY Line 10					
11	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
12	Annual Book Depreciation	Line 10 x Line 11					
13	Cumulative Book Depreciation	CY Line 12 + PY Line 13	\$	\$	\$	\$	\$
14							
15	<u>35 Year Property</u>						
16	Balance of Plant	Capital Costs, Line 48					
17	Cumulative Capital Investment	CY Line 16 + PY Line 17					
18	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
19	Annual Book Depreciation	Line 17 x Line 18					
20	Cumulative Book Depreciation	CY Line 19 + PY Line 20	\$	\$	\$	\$	\$
21							
22	<u>35 Year Property</u>						
23	Electric System Upgrades	Capital Costs, Line 49					
24	Cumulative Capital Investment	CY Line 23 + PY Line 24	545,000	545,000	545,000	545,000	545,000
25	Annual Depreciation Rate	Annual Depreciation Rate @ 2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
26	Annual Book Depreciation	Line 24 x Line 25	15,571	15,571	15,571	15,571	15,571
27	Cumulative Book Depreciation	CY Line 26 + PY Line 27	\$ 482,714	\$ 498,286	\$ 513,857	\$ 529,429	\$ 545,000
28							
29	<u>15 Year Property</u>						
30	Solar Inverter 1	Capital Costs, Line 50					
31	Cumulative Capital Investment	CY Line 30 + PY Line 31					
32	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%					
33	Annual Book Depreciation	Line 31 x Line 32					
34	Cumulative Book Depreciation	CY Line 33 + PY Line 34					
35							
36	<u>15 Year Property</u>						
37	Solar Inverter 2	Capital Costs, Line 51					
38	Cumulative Capital Investment	CY Line 37 + PY Line 38					
39	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%					
40	Annual Book Depreciation	Line 38 x Line 39					
41	Cumulative Book Depreciation	CY Line 40 + PY Line 41					
42							
43	<u>15 Year Property</u>						
44	Solar Inverter 3	Capital Costs, Line 52	\$	\$	\$	\$	\$
45	Cumulative Capital Investment	CY Line 44 + PY Line 45					
46	Annual Depreciation Rate	Annual Depreciation Rate @ 6.7%	6.7%	6.7%	6.7%	6.7%	6.7%
47	Annual Book Depreciation	Line 45 x Line 46					
48	Cumulative Book Depreciation	CY Line 47 + PY Line 48					
49							
50	Total Annual Book Depreciation	Sum Lines 5, 12, 19, 26, 33, 40, and 47	\$ 408,076	\$ 411,813	\$ 415,623	\$ 419,511	\$ 423,476
51	Total Cumulative Book Depreciation	CY Line 50 + PY Line 51	\$ 11,703,456	\$ 12,115,268	\$ 12,530,892	\$ 12,950,402	\$ 13,373,878

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 9
 Tax Depreciation Schedule

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1												
2	<u>PV Modules and Associated Materials</u>	Capital Costs, Line 46	\$									
3	Cumulative Investment Tax Basis	CY Line 2 + PY Line 3										
4	Annual 5 Year MACRS	MACRS Rate Table, Line 2	20.00%	32.00%	19.20%	11.52%	11.52%	5.76%				
5	Tax Depreciation	Line 3 x Line 4										
6												
7	<u>Racking Equipment and Associated Materials</u>	Capital Costs, Line 47	\$									
8	Cumulative Investment Tax Basis	CY Line 7 + PY Line 8										
9	Annual 5 Year MACRS	MACRS Rate Table, Line 2	20.00%	32.00%	19.20%	11.52%	11.52%	5.76%				
10	Tax Depreciation	Line 8 x Line 9										
11												
12	<u>Balance of Plant</u>	Capital Costs, Line 48	\$									
13	Cumulative Investment Tax Basis	CY Line 12 + PY Line 13										
14	Annual 5 Year MACRS	MACRS Rate Table, Line 2	20.00%	32.00%	19.20%	11.52%	11.52%	5.76%				
15	Tax Depreciation	Line 13 x Line 14										
16												
17	<u>Electric System Upgrades</u>	Capital Costs, Line 49	\$	545,000								
18	Cumulative Investment Tax Basis	CY Line 17 + PY Line 18		545,000	545,000	545,000	545,000	545,000	545,000			
19	Annual 5 Year MACRS	MACRS Rate Table, Line 2	20.00%	32.00%	19.20%	11.52%	11.52%	5.76%				
20	Tax Depreciation	Line 18 x Line 19		109,000	174,400	104,640	62,784	62,784	31,392			
21												
22	<u>Solar Inverter 1</u>	Capital Costs, Line 50	\$									
23	Cumulative Investment Tax Basis	CY Line 22 + PY Line 23										
24	Annual 5 Year MACRS	MACRS Rate Table, Line 2	20.00%	32.00%	19.20%	11.52%	11.52%	5.76%				
25	Tax Depreciation	Line 23 x Line 24										
26												
27	<u>Solar Inverter 2</u>	Capital Costs, Line 51										
28	Cumulative Investment Tax Basis	CY Line 27 + PY Line 28										
29	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
30	Tax Depreciation	Line 28 x Line 29										
31												
32	<u>Solar Inverter 3</u>	Capital Costs, Line 52										
33	Cumulative Investment Tax Basis	CY Line 32 + PY Line 33										
34	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
35	Tax Depreciation	Line 33 x Line 34										
36												
32	Total Federal Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$							\$ -	\$ -	\$ -
33												
34	Total State Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$							\$ -	\$ -	\$ -

Notes
 (1) Federal & State Tax are calculated at the same MACRS rate on Tax Depreciation Schedule and then used to calculate Deferred Taxes on Deferred Tax Calculation Schedule

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 9
 Tax Depreciation Schedule

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1												
2	PV Modules and Associated Materials	Capital Costs, Line 46										
3	Cumulative Investment Tax Basis	CY Line 2 + PY Line 3										
4	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
5	Tax Depreciation	Line 3 x Line 4										
6												
7	Racking Equipment and Associated Materials	Capital Costs, Line 47										
8	Cumulative Investment Tax Basis	CY Line 7 + PY Line 8										
9	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
10	Tax Depreciation	Line 8 x Line 9										
11												
12	Balance of Plant	Capital Costs, Line 48										
13	Cumulative Investment Tax Basis	CY Line 12 + PY Line 13										
14	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
15	Tax Depreciation	Line 13 x Line 14										
16												
17	Electric System Upgrades	Capital Costs, Line 49										
18	Cumulative Investment Tax Basis	CY Line 17 + PY Line 18										
19	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
20	Tax Depreciation	Line 18 x Line 19										
21												
22	Solar Inverter 1	Capital Costs, Line 50										
23	Cumulative Investment Tax Basis	CY Line 22 + PY Line 23										
24	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
25	Tax Depreciation	Line 23 x Line 24										
26												
27	Solar Inverter 2	Capital Costs, Line 51					\$					
28	Cumulative Investment Tax Basis	CY Line 27 + PY Line 28										
29	Annual 5 Year MACRS	MACRS Rate Table, Line 2						20.00%	32.00%	19.20%	11.52%	11.52%
30	Tax Depreciation	Line 28 x Line 29					\$					
31												
32	Solar Inverter 3	Capital Costs, Line 52										
33	Cumulative Investment Tax Basis	CY Line 32 + PY Line 33										
34	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
35	Tax Depreciation	Line 33 x Line 34										
36												
32	Total Federal Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$	-	\$	-	\$	-	\$	-	\$	-
33												
34	Total State Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$	-	\$	-	\$	-	\$	-	\$	-

Notes
 (1) Federal & State Tax are calculated at the same MACRS rate on Tax Depreciation Schedule and then used to calculate Deferred Taxes on Deferred Tax Calculation Schedule

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 9
 Tax Depreciation Schedule

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
1												
2	<u>PV Modules and Associated Materials</u>	Capital Costs, Line 46										
3	Cumulative Investment Tax Basis	CY Line 2 + PY Line 3										
4	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
5	Tax Depreciation	Line 3 x Line 4										
6												
7	<u>Racking Equipment and Associated Materials</u>	Capital Costs, Line 47										
8	Cumulative Investment Tax Basis	CY Line 7 + PY Line 8										
9	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
10	Tax Depreciation	Line 8 x Line 9										
11												
12	<u>Balance of Plant</u>	Capital Costs, Line 48										
13	Cumulative Investment Tax Basis	CY Line 12 + PY Line 13										
14	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
15	Tax Depreciation	Line 13 x Line 14										
16												
17	<u>Electric System Upgrades</u>	Capital Costs, Line 49										
18	Cumulative Investment Tax Basis	CY Line 17 + PY Line 18										
19	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
20	Tax Depreciation	Line 18 x Line 19										
21												
22	<u>Solar Inverter 1</u>	Capital Costs, Line 50										
23	Cumulative Investment Tax Basis	CY Line 22 + PY Line 23										
24	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
25	Tax Depreciation	Line 23 x Line 24										
26												
27	<u>Solar Inverter 2</u>	Capital Costs, Line 51										
28	Cumulative Investment Tax Basis	CY Line 27 + PY Line 28										
29	Annual 5 Year MACRS	MACRS Rate Table, Line 2					5.76%					
30	Tax Depreciation	Line 28 x Line 29	\$									
31												
32	<u>Solar Inverter 3</u>	Capital Costs, Line 52										
33	Cumulative Investment Tax Basis	CY Line 32 + PY Line 33										
34	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
35	Tax Depreciation	Line 33 x Line 34										
36												
32	Total Federal Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$		\$	-	\$	-	\$	-	\$	-
33												
34	Total State Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$		\$	-	\$	-	\$	-	\$	-

Notes
 (1) Federal & State Tax are calculated at the same MACRS rate on Tax Depreciation Schedule and then used to calculate Deferred Taxes on Deferred Tax Calculation Schedule

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 9
 Tax Depreciation Schedule

Line No.	Description	Reference	Year 31	Year 32	Year 33	Year 34	Year 35
1							
2	<u>PV Modules and Associated Materials</u>	Capital Costs, Line 46					
3	Cumulative Investment Tax Basis	CY Line 2 + PY Line 3					
4	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
5	Tax Depreciation	Line 3 x Line 4					
6							
7	<u>Racking Equipment and Associated Materials</u>	Capital Costs, Line 47					
8	Cumulative Investment Tax Basis	CY Line 7 + PY Line 8					
9	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
10	Tax Depreciation	Line 8 x Line 9					
11							
12	<u>Balance of Plant</u>	Capital Costs, Line 48					
13	Cumulative Investment Tax Basis	CY Line 12 + PY Line 13					
14	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
15	Tax Depreciation	Line 13 x Line 14					
16							
17	<u>Electric System Upgrades</u>	Capital Costs, Line 49					
18	Cumulative Investment Tax Basis	CY Line 17 + PY Line 18					
19	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
20	Tax Depreciation	Line 18 x Line 19					
21							
22	<u>Solar Inverter 1</u>	Capital Costs, Line 50					
23	Cumulative Investment Tax Basis	CY Line 22 + PY Line 23					
24	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
25	Tax Depreciation	Line 23 x Line 24					
26							
27	<u>Solar Inverter 2</u>	Capital Costs, Line 51					
28	Cumulative Investment Tax Basis	CY Line 27 + PY Line 28					
29	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
30	Tax Depreciation	Line 28 x Line 29					
31							
32	<u>Solar Inverter 3</u>	Capital Costs, Line 52	\$				
33	Cumulative Investment Tax Basis	CY Line 32 + PY Line 33					
34	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
35	Tax Depreciation	Line 33 x Line 34	\$	20.00%	32.00%	19.20%	11.52%
31							
32	Total Federal Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35					
33							
34	Total State Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35					

Notes
 (1) Federal & State Tax are calculated at the same MACRS rate on Tax Depreciation Schedule and then used to calculate Deferred Taxes on Deferred Tax Calculation Schedule

Unitil Energy Systems d/b/a Unitil
Benefit Cost Analysis
Schedule 10
Tax Depreciation Schedule Maintenance Capital Cost

Line No.	Description	(a)	(b) Reference	(gg) Year 31	(hh) Year 32	(ii) Year 33	(jj) Year 34	(kk) Year 35
1	5 Year MACRS		MACRS Half Year Depreciation Rates, Line 2					
2	Year 2		Column (a) spread by 5 Year MACRS on Line 1					
3	Year 3		Column (a) spread by 5 Year MACRS on Line 1					
4	Year 4		Column (a) spread by 5 Year MACRS on Line 1					
5	Year 5		Column (a) spread by 5 Year MACRS on Line 1					
6	Year 6		Column (a) spread by 5 Year MACRS on Line 1					
7	Year 7		Column (a) spread by 5 Year MACRS on Line 1					
8	Year 8		Column (a) spread by 5 Year MACRS on Line 1					
9	Year 9		Column (a) spread by 5 Year MACRS on Line 1					
10	Year 10		Column (a) spread by 5 Year MACRS on Line 1					
11	Year 11		Column (a) spread by 5 Year MACRS on Line 1					
12	Year 12		Column (a) spread by 5 Year MACRS on Line 1					
13	Year 13		Column (a) spread by 5 Year MACRS on Line 1					
14	Year 14		Column (a) spread by 5 Year MACRS on Line 1					
15	Year 15		Column (a) spread by 5 Year MACRS on Line 1					
16	Year 16		Column (a) spread by 5 Year MACRS on Line 1					
17	Year 17		Column (a) spread by 5 Year MACRS on Line 1					
18	Year 18		Column (a) spread by 5 Year MACRS on Line 1					
19	Year 19		Column (a) spread by 5 Year MACRS on Line 1					
20	Year 20		Column (a) spread by 5 Year MACRS on Line 1					
21	Year 21		Column (a) spread by 5 Year MACRS on Line 1					
22	Year 22		Column (a) spread by 5 Year MACRS on Line 1					
23	Year 23		Column (a) spread by 5 Year MACRS on Line 1					
24	Year 24		Column (a) spread by 5 Year MACRS on Line 1					
25	Year 25		Column (a) spread by 5 Year MACRS on Line 1					
26	Year 26		Column (a) spread by 5 Year MACRS on Line 1					
27	Year 27		Column (a) spread by 5 Year MACRS on Line 1					
28	Year 28		Column (a) spread by 5 Year MACRS on Line 1					
29	Year 29		Column (a) spread by 5 Year MACRS on Line 1					
30	Year 30		Column (a) spread by 5 Year MACRS on Line 1					
31	Year 31		Column (a) spread by 5 Year MACRS on Line 1					
32	Year 32		Column (a) spread by 5 Year MACRS on Line 1					
33	Year 33		Column (a) spread by 5 Year MACRS on Line 1					
34	Year 34		Column (a) spread by 5 Year MACRS on Line 1					
35	Year 35		Column (a) spread by 5 Year MACRS on Line 1					
36	Year 36		Column (a) spread by 5 Year MACRS on Line 1					
37	Year 37		Column (a) spread by 5 Year MACRS on Line 1					
38	Year 38		Column (a) spread by 5 Year MACRS on Line 1					
39	Year 39		Column (a) spread by 5 Year MACRS on Line 1					
40	Year 40		Column (a) spread by 5 Year MACRS on Line 1					
41	Year 41		Column (a) spread by 5 Year MACRS on Line 1					
42	Federal Tax Depreciation		Sum Lines 7 through 41					
43	State Tax Depreciation		Sum Lines 7 through 41					
44								
45	35 Year Property							
46	Racking							
47								
48	Column Reference	Maintenance Capital Costs, Line 12						
49	Year 1	\$	Column (a) spread by 5 Year MACRS on Line 1					
50	Year 2	\$	Column (a) spread by 5 Year MACRS on Line 1					
51	Year 3	\$	Column (a) spread by 5 Year MACRS on Line 1					
52	Year 4	\$	Column (a) spread by 5 Year MACRS on Line 1					
53	Year 5	\$	Column (a) spread by 5 Year MACRS on Line 1					
54	Year 6	\$	Column (a) spread by 5 Year MACRS on Line 1					
55	Year 7	\$	Column (a) spread by 5 Year MACRS on Line 1					
56	Year 8	\$	Column (a) spread by 5 Year MACRS on Line 1					
57	Year 9	\$	Column (a) spread by 5 Year MACRS on Line 1					
58	Year 10	\$	Column (a) spread by 5 Year MACRS on Line 1					
59	Year 11	\$	Column (a) spread by 5 Year MACRS on Line 1					
60	Year 12	\$	Column (a) spread by 5 Year MACRS on Line 1					
61	Year 13	\$	Column (a) spread by 5 Year MACRS on Line 1					
62	Year 14	\$	Column (a) spread by 5 Year MACRS on Line 1					
63	Year 15	\$	Column (a) spread by 5 Year MACRS on Line 1					
64	Year 16	\$	Column (a) spread by 5 Year MACRS on Line 1					
65	Year 17	\$	Column (a) spread by 5 Year MACRS on Line 1					
66	Year 18	\$	Column (a) spread by 5 Year MACRS on Line 1					
67	Year 19	\$	Column (a) spread by 5 Year MACRS on Line 1					
68	Year 20	\$	Column (a) spread by 5 Year MACRS on Line 1					
69	Year 21	\$	Column (a) spread by 5 Year MACRS on Line 1					
70	Year 22	\$	Column (a) spread by 5 Year MACRS on Line 1					
71	Year 23	\$	Column (a) spread by 5 Year MACRS on Line 1					
72	Year 24	\$	Column (a) spread by 5 Year MACRS on Line 1					
73	Year 25	\$	Column (a) spread by 5 Year MACRS on Line 1					
74	Year 26	\$	Column (a) spread by 5 Year MACRS on Line 1					
75	Year 27	\$	Column (a) spread by 5 Year MACRS on Line 1					
76	Year 28	\$	Column (a) spread by 5 Year MACRS on Line 1					
77	Year 29	\$	Column (a) spread by 5 Year MACRS on Line 1					
78	Year 30	\$	Column (a) spread by 5 Year MACRS on Line 1					
79	Year 31	\$	Column (a) spread by 5 Year MACRS on Line 1					
80	Year 32	\$	Column (a) spread by 5 Year MACRS on Line 1					
81	Year 33	\$	Column (a) spread by 5 Year MACRS on Line 1					
82	Year 34	\$	Column (a) spread by 5 Year MACRS on Line 1					
83	Year 35	\$	Column (a) spread by 5 Year MACRS on Line 1					
84	Federal Tax Depreciation		Sum Lines 49 through 83					
85	State Tax Depreciation		Sum Lines 49 through 83					
86								
87	Total Federal Tax Depreciation		Line 42 + Line 84					
88	Total State Tax Depreciation		Line 43 + Line 85					

Unutil Energy Systems d/b/a Unutil
 Benefit-Cost Analysis
 Schedule 11
 Capital Cost Estimate Schedule

Line No.	Description	Reference	(a)	(b)	(c)
1	<u>Detailed Capital Cost Estimates</u>				
2					
3	<u>Facility Costs</u>				
4	Solar Inverter 1 and Associated Material		\$ Cost	Labor Adjustment	Labor Adjusted ⁽¹⁾
5	PV Modules and Associated Material		\$	4.0%	\$
6	Racking Equipment and Associated Materials			35.8%	
7	Step-up Transformer and Associated Material			21.5%	
8	Fencing			0.0%	-
9	All Other Material			2.2%	
10	Project Management			29.2%	
11	5-Year Maintenance			1.9%	
12	Construction Field Representative			2.8%	
13	Spare Step-Up Transformer			1.5%	
14	Spare Inverter			1.0%	
15	Spare PV Modules (5)			0.1%	
16	Other Rec Spare Equipment			0.0%	
17	Labor & Engineering			0.0%	-
18	Total Facility Costs	Sum Lines 4 through 17	\$	100.0%	\$
19					
20	<u>Electric System Upgrades</u>				
21	System Impact Study		\$ Cost		
22	POI Material & Installation		\$ 20,000		
23	Tap 3345 Line with GOAB		350,000		
24	Kingston Relaying Upgrades		50,000		
25	Total Electric System Upgrades	Sum Lines 21 through 24	\$ 125,000		
26					
27	<u>Land Improvements</u>				
28	Site Due Diligence, Design and Permitting		\$ Cost		
29	Site Work		\$		
30	Total Land Improvements	Line 28 + Line 29	\$ 489,888		
31					
32	<u>Land Acquisition Costs</u>				
33	Site Identification		\$ Cost		
34	Purchase Price		\$ 25,000		
35	Transfer Tax				
36	Commission covered by Unutil				
37	CU Penalty				
38	Title Search				
39	Appraisal				
40	Total Land Acquisitions Costs		\$ 10,500		
41					
42	Total Capital Costs	Line 18 + Line 25 + Line 30 + Line 40	\$ 14,510,943		

Line No.	Description	Reference	(a)
43	<u>Summarized Capital Cost Estimates</u>		
44			
45	<u>Depreciable Plant Additions</u>		
46	PV Modules and Associated Materials	Line 5, Column (c)	\$ Cost
47	Racking Equipment and Associated Materials	Line 6, Column (c)	\$
48	Balance of Plant	Sum Column (c) Lines 7 through 16	
49	Electric System Upgrades	Line 25, Column (a)	545,000
50	Solar Inverter 1	Line 4, Column (c)	
51	Solar Inverter 2 (Year 15) ⁽²⁾	Future Value of Solar Inverter 1	
52	Solar Inverter 3 (Year 30) ⁽²⁾	Future Value of Solar Inverter 2	
53	Total	Sum Lines 46 through 51	\$ 13,665,598
54			
55	<u>Non-Depreciable Plant Additions⁽³⁾</u>		
56	Land Improvements	Line 30	\$ Cost
57	Land Acquisition Costs	Line 40 x 50%	\$ 820,438
58	Total	Line 56 + Line 57	\$

Notes
 (1) Labor and Facility Engineering allocated based on proportional cost of line item
 (2) Assumes a 15-year life, adjusted for inflation
 (3) Including 50% of total Land Acquisition Costs to estimate cost transferred to UES

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 12
 Maintenance Capital Costs

Line No.	Description	Reference	(a) Year 0	(b) Year 1	(c) Year 2	(d) Year 3	(e) Year 4	(f) Year 5	(g) Year 6	(h) Year 7	(i) Year 8	(j) Year 9	(k) Year 10
1	PV Modules & Associated Materials												
2	Original Cost	Capital Cost Estimate Schedule, Line 46	\$ [REDACTED]										
3	Expected Replacement % ⁽¹⁾			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
4	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate		1.02	1.04	1.06	1.08	1.10	1.13	1.15	1.17	1.20	1.22
5	Annual Maintenance Cost	Line 2 x Line 3 x Line 4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6													
7													
8	Racking Equipment & Associated Materials												
9	Original Cost	Capital Cost Estimate Schedule, Line 47	\$ [REDACTED]										
10	Expected Replacement % ⁽¹⁾			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
11	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate		1.02	1.04	1.06	1.08	1.10	1.13	1.15	1.17	1.20	1.22
12	Annual Maintenance Cost	Line 9 x Line 10 x Line 11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
13													
14	Total Annual Maintenance Capital	Line 5 + Line 12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Notes

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 12
 Maintenance Capital Costs

Line No.	Description	Reference	(l) Year 11	(m) Year 12	(n) Year 13	(o) Year 14	(p) Year 15	(q) Year 16	(r) Year 17	(s) Year 18	(t) Year 19	(u) Year 20
1	PV Modules & Associated Materials											
2	Original Cost	Capital Cost Estimate Schedule, Line 46	[REDACTED]									
3	Expected Replacement % ⁽¹⁾		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
4	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate	1.24	1.27	1.29	1.32	1.35	1.37	1.40	1.43	1.46	1.49
5	Annual Maintenance Cost	Line 2 x Line 3 x Line 4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6												
7												
8	Racking Equipment & Associated Materials											
9	Original Cost	Capital Cost Estimate Schedule, Line 47	[REDACTED]									
10	Expected Replacement % ⁽¹⁾		0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
11	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate	1.24	1.27	1.29	1.32	1.35	1.37	1.40	1.43	1.46	1.49
12	Annual Maintenance Cost	Line 9 x Line 10 x Line 11	\$ [REDACTED]									
13												
14	Total Annual Maintenance Capital	Line 5 + Line 12	\$ [REDACTED]									

Notes

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 12
 Maintenance Capital Costs

Line No.	Description	Reference	(v) Year 21	(w) Year 22	(x) Year 23	(y) Year 24	(z) Year 25	(aa) Year 26	(bb) Year 27	(cc) Year 28	(dd) Year 29	(ee) Year 30
1	PV Modules & Associated Materials											
2	Original Cost	Capital Cost Estimate Schedule, Line 46	[REDACTED]									
3	Expected Replacement % ⁽¹⁾		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
4	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate	1.52	1.55	1.58	1.61	1.64	1.67	1.71	1.74	1.78	1.81
5	Annual Maintenance Cost	Line 2 x Line 3 x Line 4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6												
7												
8	Racking Equipment & Associated Materials											
9	Original Cost	Capital Cost Estimate Schedule, Line 47	[REDACTED]									
10	Expected Replacement % ⁽¹⁾		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
11	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate	1.52	1.55	1.58	1.61	1.64	1.67	1.71	1.74	1.78	1.81
12	Annual Maintenance Cost	Line 9 x Line 10 x Line 11	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]					
13												
14	Total Annual Maintenance Capital	Line 5 + Line 12	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]					

Notes

Unitil Energy Systems d/b/a Unitil
 Benefit-Cost Analysis
 Schedule 12
 Maintenance Capital Costs

Line No.	Description	Reference	(ff) Year 31	(gg) Year 32	(hh) Year 33	(ii) Year 34	(jj) Year 35
1	PV Modules & Associated Materials						
2	Original Cost	Capital Cost Estimate Schedule, Line 46	[REDACTED]				
3	Expected Replacement % ⁽¹⁾		0.5%	0.5%	0.5%	0.5%	0.5%
4	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate	1.85	1.88	1.92	1.96	2.00
5	Annual Maintenance Cost	Line 2 x Line 3 x Line 4	\$ [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
6							
7							
8	Racking Equipment & Associated Materials						
9	Original Cost	Capital Cost Estimate Schedule, Line 47	[REDACTED]				
10	Expected Replacement % ⁽¹⁾		2.0%	2.0%	2.0%	2.0%	2.0%
11	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate	1.85	1.88	1.92	1.96	2.00
12	Annual Maintenance Cost	Line 9 x Line 10 x Line 11	\$ [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
13							
14	Total Annual Maintenance Capital	Line 5 + Line 12	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Notes

Unitil Energy Systems d/b/a Unitil
Benefit-Cost Analysis
Schedule 13
Cost of Capital

Line No.	Description	Reference	(a)	(b)	(c) = (a) x (b)	(e)	(f) = (c) x (e)	(g)	(h) = (a) x (g)
			Capital Structure	Cost of Capital	Weighted Cost of Capital	Tax Factor	PRE-TAX Weighted Cost of Capital	AFTER-TAX Adjusted Capital Structure ⁽¹⁾	Weighted Cost of Capital
1	<u>Cost of Capital Calculation</u>								
2	Common Stock Equity	DE 21-030	52.00%	9.20%	4.78%	1.3685	6.55%	9.20%	4.78%
3									
4	Preferred Stock Equity	DE 21-030	0.00%	6.00%	0.00%	1.0000	0.00%	6.00%	0.00%
5									
6	Long Term Debt	DE 21-030	<u>48.00%</u>	5.49%	<u>2.64%</u>	1.0000	<u>2.64%</u>	4.01%	<u>1.93%</u>
7									
8	Total	Line 2 + Line 4 + Line 6	<u>100.00%</u>		<u>7.42%</u>		<u>9.18%</u>		<u>6.71%</u>
9									
10			(a)						
11	<u>Tax Rate Calculation</u>		<u>Rate</u>						
12	State - NH ⁽²⁾		7.50%						
13									
14	Federal		21.00%						
15									
16	Federal Benefit of State Income Tax	-(Line 12 x Line 14)	-1.58%						
17									
18	Effective Tax Rate	Line 12 + Line 14 + Line 16	<u>26.93%</u>						
19									
20	Gross-Up Factor	(1 ÷ (1 - Line 18))	<u>1.3685</u>						

Notes

(1) Tax Effected Cost of Long-Term Debt

(2) N.H. Business Profit Tax rate on or after 12/31/2023

Unitil Energy Systems d/b/a Unitil

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Unitil Energy Systems d/b/a Unitil
Schedule 1
Summary

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Direct Customer Benefits											
2	Avoided Energy Costs	Direct Customer Benefits, Line 11	\$ 829,550	\$ 682,379	\$ 660,839	\$ 645,528	\$ 655,387	\$ 665,382	\$ 675,515	\$ 685,787	\$ 696,200	\$ 706,755
3	Avoided Capacity Costs	Direct Customer Benefits, Line 18	70,677	69,264	68,946	68,628	68,310	67,992	67,674	67,356	67,037	66,719
4	Local Transmission Benefits	Direct Customer Benefits, Line 26	11,364	11,360	11,534	11,710	11,889	12,070	12,254	12,441	12,629	12,821
5	Regional Transmission Benefits	Direct Customer Benefits, Line 36	83,947	83,913	85,198	86,501	87,822	89,162	90,520	91,896	93,291	94,706
6	Renewable Energy Credit Savings	Direct Customer Benefits, Line 41	336,203	329,479	327,966	326,453	324,940	323,427	321,914	320,401	318,888	317,375
7	Total Direct Customer Benefits	Sum Lines 2 through 6	<u>\$ 1,331,740</u>	<u>\$ 1,176,394</u>	<u>\$ 1,154,483</u>	<u>\$ 1,138,820</u>	<u>\$ 1,148,348</u>	<u>\$ 1,158,033</u>	<u>\$ 1,167,876</u>	<u>\$ 1,177,880</u>	<u>\$ 1,188,046</u>	<u>\$ 1,198,376</u>
8												
9	Costs											
10	Revenue Requirement	Rate Base & Revenue Requirement, Line 29	\$ 1,608,070	\$ 1,493,649	\$ 1,374,695	\$ 1,283,407	\$ 1,202,453	\$ 1,153,556	\$ 1,096,473	\$ 1,047,137	\$ 997,748	\$ 948,304
11	Total Costs	Line 10	<u>\$ 1,608,070</u>	<u>\$ 1,493,649</u>	<u>\$ 1,374,695</u>	<u>\$ 1,283,407</u>	<u>\$ 1,202,453</u>	<u>\$ 1,153,556</u>	<u>\$ 1,096,473</u>	<u>\$ 1,047,137</u>	<u>\$ 997,748</u>	<u>\$ 948,304</u>
12												
13	Net Benefit (Cost) to Customers	Line 7 - Line 11	\$ (276,329)	\$ (317,255)	\$ (220,213)	\$ (144,588)	\$ (54,105)	\$ 4,477	\$ 71,403	\$ 130,743	\$ 190,299	\$ 250,072
14												
15	Required Rate of Return	Cost of Capital, Line 8, Column (h)	6.71%									
16												
17	Net Present Value (NPV)											
18	PV of Direct Customer Benefits	PV of Line 7	\$ 14,663,863									
19	PV of Costs	PV of Line 11	<u>14,512,153</u>									
20	NPV of Project	Line 18 - Line 19	<u>\$ 151,711</u>									
21												
22	Internal Rate of Return	Internal Rate of Return of Line 13	7.81%									
23												
24	Benefit-Cost Ratio (BCR)	Line 18 ÷ Line 19	1.01									

Unitil Energy Systems d/b/a Unitil
Schedule 1
Summary

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25
1	Direct Customer Benefits						
2	Avoided Energy Costs	Direct Customer Benefits, Line 11	\$ 832,682	\$ 845,062	\$ 857,605	\$ 870,312	\$ 883,184
3	Avoided Capacity Costs	Direct Customer Benefits, Line 18	75,555	76,678	77,816	78,969	80,137
4	Local Transmission Benefits	Direct Customer Benefits, Line 26	15,105	15,330	15,557	15,788	16,021
5	Regional Transmission Benefits	Direct Customer Benefits, Line 36	111,580	113,239	114,920	116,623	118,347
6	Renewable Energy Credit Savings	Direct Customer Benefits, Line 41	300,733	299,220	297,707	296,194	294,682
7	Total Direct Customer Benefits	Sum Lines 2 through 6	<u>\$ 1,335,655</u>	<u>\$ 1,349,530</u>	<u>\$ 1,363,607</u>	<u>\$ 1,377,886</u>	<u>\$ 1,392,372</u>
8							
9	Costs						
10	Revenue Requirement	Rate Base & Revenue Requirement, Line 29	\$ 1,010,038	\$ 997,724	\$ 947,276	\$ 898,868	\$ 851,248
11	Total Costs	Line 10	<u>\$ 1,010,038</u>	<u>\$ 997,724</u>	<u>\$ 947,276</u>	<u>\$ 898,868</u>	<u>\$ 851,248</u>
12							
13	Net Benefit (Cost) to Customers	Line 7 - Line 11	\$ 325,617	\$ 351,806	\$ 416,330	\$ 479,019	\$ 541,124
14							
15	Required Rate of Return	Cost of Capital, Line 8, Column (h)					
16							
17	Net Present Value (NPV)						
18	PV of Direct Customer Benefits	PV of Line 7					
19	PV of Costs	PV of Line 11					
20	NPV of Project	Line 18 - Line 19					
21							
22	Internal Rate of Return	Internal Rate of Return of Line 13					
23							
24	Benefit-Cost Ratio (BCR)	Line 18 ÷ Line 19					

Unitil Energy Systems d/b/a Unitil
 Schedule 2
 Direct Customer Benefits

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Capacity - Nameplate		4.99 MW									
2	Efficiency Rate	Decrease by 2.0% in Year 2 then 0.45% annually	100.0%	98.0%	97.6%	97.1%	96.7%	96.2%	95.8%	95.3%	94.9%	94.4%
3	Capacity - Adjusted for Efficiency Rate	Line 1 x Line 2	4.99 MW	4.89 MW	4.87 MW	4.85 MW	4.82 MW	4.80 MW	4.78 MW	4.76 MW	4.73 MW	4.71 MW
4												
5	EIA Energy Outlook 2022 - Escalation Rate ⁽¹⁾	Annual Escalation Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
6												
7	Avoided Energy Costs											
8	Annual Capacity Factor		20.93%	20.93%	20.93%	20.93%	20.93%	20.93%	20.93%	20.93%	20.93%	20.93%
9	Annual Production (kWh)	Line 3 x Line 8 x 1000 x 365 x 24	9,148,370	8,965,403	8,924,235	8,883,067	8,841,900	8,800,732	8,759,564	8,718,397	8,677,229	8,636,061
10	Energy Rate (\$ Per kWh) ⁽²⁾	See Footnote	\$ 0.0907	\$ 0.0761	\$ 0.0740	\$ 0.0727	\$ 0.0741	\$ 0.0756	\$ 0.0771	\$ 0.0787	\$ 0.0802	\$ 0.0818
11	Annual Avoided Energy Costs	Line 9 x Line 10	\$ 829,550	\$ 682,379	\$ 660,839	\$ 645,528	\$ 655,387	\$ 665,382	\$ 675,515	\$ 685,787	\$ 696,200	\$ 706,755
12												
13	Avoided Capacity Costs											
14	PV Capacity at Annual Peak		33.6%	33.6%	33.6%	33.6%	33.6%	33.6%	33.6%	33.6%	33.6%	33.6%
15	Capacity at Peak Hour (kW)	Line 3 x Line 14 x 1000	1,678	1,644	1,637	1,629	1,622	1,614	1,607	1,599	1,592	1,584
16	Capacity Clearing Price (\$ kW-Month) ⁽³⁾	See Footnote	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51	\$ 3.51
17	Monthly Avoided Capacity Costs	Line 15 x Line 16	\$ 5,890	\$ 5,772	\$ 5,745	\$ 5,719	\$ 5,692	\$ 5,666	\$ 5,639	\$ 5,613	\$ 5,586	\$ 5,560
18	Annual Avoided Capacity Costs	Line 17 x 12	\$ 70,677	\$ 69,264	\$ 68,946	\$ 68,628	\$ 68,310	\$ 67,992	\$ 67,674	\$ 67,356	\$ 67,037	\$ 66,719
19												
20	Local Transmission Benefits											
21	PV Capacity at Monthly Peak		11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%
22	Capacity at Peak Hour (MW-Month)	Line 3 x Line 21	0.58	0.57	0.56	0.56	0.56	0.56	0.55	0.55	0.55	0.55
23	Transmission Rate (\$ Per MW-Month) ⁽⁴⁾	Annual Escalation, Line 5	\$ 1,630.95	\$ 1,663.57	\$ 1,696.84	\$ 1,730.78	\$ 1,765.39	\$ 1,800.70	\$ 1,836.71	\$ 1,873.45	\$ 1,910.92	\$ 1,949.14
24	Ancillary Services Rate (\$ Per MW-Month) ⁽⁴⁾	Annual Escalation, Line 5	\$ 7.51	\$ 7.66	\$ 7.81	\$ 7.97	\$ 8.13	\$ 8.29	\$ 8.46	\$ 8.63	\$ 8.80	\$ 8.98
25	Monthly Local Transmission Benefits	Line 22 x (Line 23 + Line 24)	\$ 947	\$ 947	\$ 961	\$ 976	\$ 991	\$ 1,006	\$ 1,021	\$ 1,037	\$ 1,052	\$ 1,068
26	Annual Local Transmission Benefits	Line 25 x 12	\$ 11,364	\$ 11,360	\$ 11,534	\$ 11,710	\$ 11,889	\$ 12,070	\$ 12,254	\$ 12,441	\$ 12,629	\$ 12,821
27												
28	Regional Transmission Benefits											
29	PV Capacity at Monthly Peak		11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%
30	Capacity at Peak Hour (kW-Month)	Line 3 x Line 29 x 1000	578	566	564	561	559	556	553	551	548	546
31	ISO NE Section 4A, Schedule 1 Rate (\$ kW-Month) ⁽⁵⁾	Annual Escalation, Line 5	\$ 0.2048	\$ 0.2088	\$ 0.2130	\$ 0.2173	\$ 0.2216	\$ 0.2261	\$ 0.2306	\$ 0.2352	\$ 0.2399	\$ 0.2447
32	ISO NE Section 4A, Schedule 5 Rate (\$ kW-Month) ⁽⁶⁾	Annual Escalation, Line 5	\$ 0.0070	\$ 0.0072	\$ 0.0073	\$ 0.0074	\$ 0.0076	\$ 0.0077	\$ 0.0079	\$ 0.0081	\$ 0.0082	\$ 0.0084
33	ISO NE Section 2, Schedule 1 Rate (\$ kW-Month) ⁽⁷⁾	Annual Escalation, Line 5	\$ 0.1459	\$ 0.1489	\$ 0.1518	\$ 0.1549	\$ 0.1580	\$ 0.1611	\$ 0.1643	\$ 0.1676	\$ 0.1710	\$ 0.1744
34	ISO NE Section 2, Schedule 9 Rate (\$ kW-Month) ⁽⁸⁾	Annual Escalation, Line 5	\$ 11.7453	\$ 11.9802	\$ 12.2198	\$ 12.4642	\$ 12.7135	\$ 12.9678	\$ 13.2272	\$ 13.4917	\$ 13.7615	\$ 14.0368
35	Monthly Regional Transmission Benefits	Line 30 x (Sum Lines 31 through 34)	\$ 6,996	\$ 6,993	\$ 7,100	\$ 7,208	\$ 7,319	\$ 7,430	\$ 7,543	\$ 7,658	\$ 7,774	\$ 7,892
36	Annual Regional Transmission Benefits	Line 35 x 12	\$ 83,947	\$ 83,913	\$ 85,198	\$ 86,501	\$ 87,822	\$ 89,162	\$ 90,520	\$ 91,896	\$ 93,291	\$ 94,706
37												
38	Renewable Energy Credits (REC) Savings											
39	Annual Production (MWh)	Line 9 ÷ 1000	9,148	8,965	8,924	8,883	8,842	8,801	8,760	8,718	8,677	8,636
40	REC II Rate (\$ Per MWh) ⁽⁹⁾	New England Power Pool										
41	Annual REC Savings	Line 39 x Line 40										
42												
43	Total Direct Customer Benefits	Line 11 + Line 18 + Line 26 + Line 36 + Line 41	\$ 1,331,740	\$ 1,176,394	\$ 1,154,483	\$ 1,138,820	\$ 1,148,348	\$ 1,158,033	\$ 1,167,876	\$ 1,177,880	\$ 1,188,046	\$ 1,198,376

Notes
 (1) EIA Annual Energy Outlook 2022, Table 8. End-Use Price, All Sectors Average
 (2) Using ISO New England Futures from Year 1 through Year 4. Annual escalation beginning in Year 5
 (3) 'Avoided Energy Supply Components in New England' 2021 Report, Page 123, Table 40. Counter-factual #1: 15-year Levelized Cost. Annual escalation beginning in Year 13
 (4) Eversource, Schedule 21-ES (Part A) ISO-NE Transmission Markets and Services Tariff, Rates effective January 1, 2022
 (5) ISO New England Tariff Rates, Section 4A. Recovery of ISO Administrative Expenses, Schedule 1. Scheduling, System Control and Dispatch Service, Rates effective January 1, 2022
 (6) ISO New England Tariff Rates, Section 4A. Recovery of ISO Administrative Expenses, Schedule 3. Reliability Administration Service, Rates effective January 1, 2022
 (7) ISO New England Tariff Rates, Section 2. ISO New England Open Access Transmission Tariff (OATT), Schedule 1. Scheduling, System Control and Dispatch Service, Rates effective June 1, 2022. Divided by 12.
 (8) ISO New England Tariff Rates, Section 2. ISO New England Open Access Transmission Tariff (OATT), Schedule 9. Regional Network Service (RNS), Rates effective January 1, 2023. Divided by 12.
 (9) NH Class II REC 2023 Term

Unitil Energy Systems d/b/a Unitil
 Schedule 2
 Direct Customer Benefits

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Capacity - Nameplate		4.99 MW									
2	Efficiency Rate	Decrease by 2.0% in Year 2 then 0.45% annually	94.0%	93.5%	93.1%	92.6%	92.2%	91.7%	91.3%	90.8%	90.4%	89.9%
3	Capacity - Adjusted for Efficiency Rate	Line 1 x Line 2	4.69 MW	4.67 MW	4.64 MW	4.62 MW	4.60 MW	4.58 MW	4.55 MW	4.53 MW	4.51 MW	4.49 MW
4												
5	EIA Energy Outlook 2022 - Escalation Rate ⁽¹⁾	Annual Escalation Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
6												
7	Avoided Energy Costs											
8	Annual Capacity Factor		20.93%	20.93%	20.93%	20.93%	20.93%	20.93%	20.93%	20.93%	20.93%	20.93%
9	Annual Production (kWh)	Line 3 x Line 8 x 1000 x 365 x 24	8,594,894	8,553,726	8,512,558	8,471,391	8,430,223	8,389,055	8,347,888	8,306,720	8,265,552	8,224,385
10	Energy Rate (\$ Per kWh) ⁽²⁾	See Footnote	\$ 0.0835	\$ 0.0851	\$ 0.0868	\$ 0.0886	\$ 0.0904	\$ 0.0922	\$ 0.0940	\$ 0.0959	\$ 0.0978	\$ 0.0998
11	Annual Avoided Energy Costs	Line 9 x Line 10	\$ 717,453	\$ 728,297	\$ 739,288	\$ 750,427	\$ 761,716	\$ 773,156	\$ 784,749	\$ 796,497	\$ 808,400	\$ 820,461
12												
13	Avoided Capacity Costs											
14	PV Capacity at Annual Peak		33.6%	33.6%	33.6%	33.6%	33.6%	33.6%	33.6%	33.6%	33.6%	33.6%
15	Capacity at Peak Hour (kW)	Line 3 x Line 14 x 1000	1,576	1,569	1,561	1,554	1,546	1,539	1,531	1,524	1,516	1,509
16	Capacity Clearing Price (\$ kW-Month) ⁽³⁾	See Footnote	\$ 3.51	\$ 3.51	\$ 3.58	\$ 3.65	\$ 3.72	\$ 3.80	\$ 3.88	\$ 3.95	\$ 4.03	\$ 4.11
17	Monthly Avoided Capacity Costs	Line 15 x Line 16	\$ 5,533	\$ 5,507	\$ 5,590	\$ 5,674	\$ 5,760	\$ 5,846	\$ 5,934	\$ 6,023	\$ 6,113	\$ 6,204
18	Annual Avoided Capacity Costs	Line 17 x 12	\$ 66,401	\$ 66,083	\$ 67,081	\$ 68,091	\$ 69,116	\$ 70,154	\$ 71,206	\$ 72,272	\$ 73,352	\$ 74,446
19												
20	Local Transmission Benefits											
21	PV Capacity at Monthly Peak		11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%
22	Capacity at Peak Hour (MW-Month)	Line 3 x Line 21	0.54	0.54	0.54	0.54	0.53	0.53	0.53	0.52	0.52	0.52
23	Transmission Rate (\$ Per MW-Month) ⁽⁴⁾	Annual Escalation, Line 5	\$ 1,988.12	\$ 2,027.88	\$ 2,068.44	\$ 2,109.81	\$ 2,152.00	\$ 2,195.04	\$ 2,238.94	\$ 2,283.72	\$ 2,329.40	\$ 2,375.99
24	Ancillary Services Rate (\$ Per MW-Month) ⁽⁴⁾	Annual Escalation, Line 5	\$ 9.15	\$ 9.34	\$ 9.52	\$ 9.71	\$ 9.91	\$ 10.11	\$ 10.31	\$ 10.52	\$ 10.73	\$ 10.94
25	Monthly Local Transmission Benefits	Line 22 x (Line 23 + Line 24)	\$ 1,085	\$ 1,101	\$ 1,118	\$ 1,134	\$ 1,151	\$ 1,169	\$ 1,186	\$ 1,204	\$ 1,222	\$ 1,240
26	Annual Local Transmission Benefits	Line 25 x 12	\$ 13,015	\$ 13,212	\$ 13,411	\$ 13,613	\$ 13,818	\$ 14,025	\$ 14,236	\$ 14,449	\$ 14,665	\$ 14,884
27												
28	Regional Transmission Benefits											
29	PV Capacity at Monthly Peak		11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%
30	Capacity at Peak Hour (kW-Month)	Line 3 x Line 29 x 1000	543	540	538	535	533	530	527	525	522	520
31	ISO NE Section 4A, Schedule 1 Rate (\$ kW-Month) ⁽⁵⁾	Annual Escalation, Line 5	\$ 0.2496	\$ 0.2546	\$ 0.2597	\$ 0.2649	\$ 0.2702	\$ 0.2756	\$ 0.2811	\$ 0.2867	\$ 0.2924	\$ 0.2983
32	ISO NE Section 4A, Schedule 5 Rate (\$ kW-Month) ⁽⁶⁾	Annual Escalation, Line 5	\$ 0.0085	\$ 0.0087	\$ 0.0089	\$ 0.0091	\$ 0.0092	\$ 0.0094	\$ 0.0096	\$ 0.0098	\$ 0.0100	\$ 0.0102
33	ISO NE Section 2, Schedule 1 Rate (\$ kW-Month) ⁽⁷⁾	Annual Escalation, Line 5	\$ 0.1779	\$ 0.1814	\$ 0.1851	\$ 0.1888	\$ 0.1926	\$ 0.1964	\$ 0.2003	\$ 0.2043	\$ 0.2084	\$ 0.2126
34	ISO NE Section 2, Schedule 9 Rate (\$ kW-Month) ⁽⁸⁾	Annual Escalation, Line 5	\$ 14.3175	\$ 14.6038	\$ 14.8959	\$ 15.1938	\$ 15.4977	\$ 15.8077	\$ 16.1238	\$ 16.4463	\$ 16.7752	\$ 17.1107
35	Monthly Regional Transmission Benefits	Line 30 x (Sum Lines 31 through 34)	\$ 8,012	\$ 8,133	\$ 8,255	\$ 8,380	\$ 8,506	\$ 8,634	\$ 8,763	\$ 8,894	\$ 9,027	\$ 9,162
36	Annual Regional Transmission Benefits	Line 35 x 12	\$ 96,139	\$ 97,593	\$ 99,065	\$ 100,558	\$ 102,071	\$ 103,604	\$ 105,157	\$ 106,731	\$ 108,326	\$ 109,943
37												
38	Renewable Energy Credits (REC) Savings											
39	Annual Production (MWh)	Line 9 ÷ 1000	8,595	8,554	8,513	8,471	8,430	8,389	8,348	8,307	8,266	8,224
40	REC II Rate (\$ Per MWh) ⁽⁹⁾	New England Power Pool										
41	Annual REC Savings	Line 39 x Line 40										
42												
43	Total Direct Customer Benefits	Line 11 + Line 18 + Line 26 + Line 36 + Line 41	\$ 1,208,871	\$ 1,219,534	\$ 1,231,681	\$ 1,244,013	\$ 1,256,531	\$ 1,269,236	\$ 1,282,132	\$ 1,295,220	\$ 1,308,502	\$ 1,321,980

Notes
 (1) EIA Annual Energy Outlook 2022, Table 8. End-Use Price, All Sectors Average
 (2) Using ISO New England Futures from Year 1 through Year 4. Annual escalation beginning in Year 5
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 (9) NH Class II REC 2023 Term

Unitil Energy Systems d/b/a Unitil
 Schedule 2
 Direct Customer Benefits

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25	
1	Capacity - Nameplate		4.99 MW					
2	Efficiency Rate	Decrease by 2.0% in Year 2 then 0.45% annually	89.5%	89.0%	88.6%	88.1%	87.7%	
3	Capacity - Adjusted for Efficiency Rate	Line 1 x Line 2	4.46 MW	4.44 MW	4.42 MW	4.40 MW	4.37 MW	
4								
5	EIA Energy Outlook 2022 - Escalation Rate ⁽¹⁾	Annual Escalation Rate	2.00%	2.00%	2.00%	2.00%	2.00%	
6								
7	Avoided Energy Costs							
8	Annual Capacity Factor		20.93%	20.93%	20.93%	20.93%	20.93%	
9	Annual Production (kWh)	Line 3 x Line 8 x 1000 x 365 x 24	8,183,217	8,142,049	8,100,882	8,059,714	8,018,546	
10	Energy Rate (\$ Per kWh) ⁽²⁾	See Footnote	\$ 0.1018	\$ 0.1038	\$ 0.1059	\$ 0.1080	\$ 0.1101	
11	Annual Avoided Energy Costs	Line 9 x Line 10	\$ 832,682	\$ 845,062	\$ 857,605	\$ 870,312	\$ 883,184	
12								
13	Avoided Capacity Costs							
14	PV Capacity at Annual Peak		33.6%	33.6%	33.6%	33.6%	33.6%	
15	Capacity at Peak Hour (kW)	Line 3 x Line 14 x 1000	1,501	1,493	1,486	1,478	1,471	
16	Capacity Clearing Price (\$ kW-Month) ⁽³⁾	See Footnote	\$ 4.19	\$ 4.28	\$ 4.36	\$ 4.45	\$ 4.54	
17	Monthly Avoided Capacity Costs	Line 15 x Line 16	\$ 6,296	\$ 6,390	\$ 6,485	\$ 6,581	\$ 6,678	
18	Annual Avoided Capacity Costs	Line 17 x 12	\$ 75,555	\$ 76,678	\$ 77,816	\$ 78,969	\$ 80,137	
19								
20	Local Transmission Benefits							
21	PV Capacity at Monthly Peak		11.6%	11.6%	11.6%	11.6%	11.6%	
22	Capacity at Peak Hour (MW-Month)	Line 3 x Line 21	0.52	0.51	0.51	0.51	0.51	
23	Transmission Rate (\$ Per MW-Month) ⁽⁴⁾	Annual Escalation, Line 5	\$ 2,423.51	\$ 2,471.98	\$ 2,521.42	\$ 2,571.84	\$ 2,623.28	
24	Ancillary Services Rate (\$ Per MW-Month) ⁽⁴⁾	Annual Escalation, Line 5	\$ 11.16	\$ 11.38	\$ 11.61	\$ 11.84	\$ 12.08	
25	Monthly Local Transmission Benefits	Line 22 x (Line 23 + Line 24)	\$ 1,259	\$ 1,277	\$ 1,296	\$ 1,316	\$ 1,335	
26	Annual Local Transmission Benefits	Line 25 x 12	\$ 15,105	\$ 15,330	\$ 15,557	\$ 15,788	\$ 16,021	
27								
28	Regional Transmission Benefits							
29	PV Capacity at Monthly Peak		11.6%	11.6%	11.6%	11.6%	11.6%	
30	Capacity at Peak Hour (kW-Month)	Line 3 x Line 29 x 1000	517	514	512	509	507	
31	ISO NE Section 4A, Schedule 1 Rate (\$ kW-Month) ⁽⁵⁾	Annual Escalation, Line 5	\$ 0.3042	\$ 0.3103	\$ 0.3165	\$ 0.3229	\$ 0.3293	
32	ISO NE Section 4A, Schedule 5 Rate (\$ kW-Month) ⁽⁶⁾	Annual Escalation, Line 5	\$ 0.0104	\$ 0.0106	\$ 0.0108	\$ 0.0111	\$ 0.0113	
33	ISO NE Section 2, Schedule 1 Rate (\$ kW-Month) ⁽⁷⁾	Annual Escalation, Line 5	\$ 0.2168	\$ 0.2212	\$ 0.2256	\$ 0.2301	\$ 0.2347	
34	ISO NE Section 2, Schedule 9 Rate (\$ kW-Month) ⁽⁸⁾	Annual Escalation, Line 5	\$ 17.4529	\$ 17.8020	\$ 18.1580	\$ 18.5212	\$ 18.8916	
35	Monthly Regional Transmission Benefits	Line 30 x (Sum Lines 31 through 34)	\$ 9,298	\$ 9,437	\$ 9,577	\$ 9,719	\$ 9,862	
36	Annual Regional Transmission Benefits	Line 35 x 12	\$ 111,580	\$ 113,239	\$ 114,920	\$ 116,623	\$ 118,347	
37								
38	Renewable Energy Credits (REC) Savings							
39	Annual Production (MWh)	Line 9 ÷ 1000	8,183	8,142	8,101	8,060	8,019	
40	REC II Rate (\$ Per MWh) ⁽⁹⁾	New England Power Pool	\$	\$	\$	\$	\$	
41	Annual REC Savings	Line 39 x Line 40	\$	\$	\$	\$	\$	
42								
43	Total Direct Customer Benefits	Line 11 + Line 18 + Line 26 + Line 36 + Line 41	\$ 1,335,655	\$ 1,349,530	\$ 1,363,607	\$ 1,377,886	\$ 1,392,372	

Notes
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 (9) NH Class II REC 2023 Term

Unitol Energy Systems d/b/a Unitol
 Schedule 3
 Rate Base & Revenue Requirement

Line No.	Description	Reference	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Investments												
2	PV Modules	Capital Costs, Line 46, Maintenance Capital Costs, Line 5	\$ [REDACTED]	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3	Racking Equipment	Capital Costs, Line 47, Maintenance Capital Costs, Line 12	[REDACTED]	-	-	-	-	-	-	-	-	-	-
4	Balance of Plant	Capital Costs, Line 48	[REDACTED]										
5	Electric System Upgrades	Capital Costs, Line 49	600,000										
6	Solar Inverter 1	Capital Costs, Line 50	[REDACTED]										
7	Solar Inverter 2	Capital Costs, Line 51	[REDACTED]										
8	Solar Inverter 3	Capital Costs, Line 52	[REDACTED]										
9	Land Improvements	Capital Costs, Line 56	[REDACTED]										
10	Land Acquisition	Capital Costs, Line 57	820,438										
11	Total Investments	Sum Lines 2 through 10	\$ 12,712,264	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
12													
13	Rate Base Calculation												
14	Gross Plant ⁽¹⁾	CY Line 11 + PY Line 14	\$ 12,712,264	\$ 12,712,264	\$ 12,712,264	\$ 12,712,264	\$ 12,712,264	\$ 12,712,264	\$ 12,712,264	\$ 12,712,264	\$ 12,712,264	\$ 12,712,264	\$ 12,712,264
15	Accumulated Depreciation ⁽¹⁾	Book Depreciation Schedule, Line 51	(470,108)	(940,217)	(1,410,325)	(1,880,433)	(2,350,541)	(2,820,650)	(3,290,758)	(3,760,866)	(4,230,975)	(4,701,083)	(5,171,191)
16	Net Plant	Line 14 + Line 15	12,242,156	11,772,048	11,301,939	10,831,831	10,361,723	9,891,614	9,421,506	8,951,398	8,481,290	8,011,181	7,541,070
17	Deferred Income Tax	Deferred Tax Calculation, Line - 28	(463,332)	(1,280,609)	(1,720,344)	(1,933,555)	(2,146,765)	(2,190,082)	(2,063,506)	(1,936,929)	(1,810,352)	(1,683,776)	(1,557,200)
18	Year End Rate Base	Line 16 + Line 17	\$ 12,712,264	\$ 11,778,824	\$ 10,491,439	\$ 9,581,595	\$ 8,898,276	\$ 8,214,957	\$ 7,701,532	\$ 7,358,000	\$ 7,014,469	\$ 6,670,937	\$ 6,327,406
19													
20	Revenue Requirement												
21	Average Rate Base	(CY Line 18 + PY Line 18) ÷ 2	\$ 12,245,544	\$ 11,135,131	\$ 10,036,517	\$ 9,239,936	\$ 8,556,617	\$ 7,958,245	\$ 7,529,766	\$ 7,186,235	\$ 6,842,703	\$ 6,499,171	\$ 6,155,639
22	Pre-Tax Rate of Return	Cost of Capital, Line 8, Column (f)	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%
23	Return and Taxes	Line 21 x Line 22	\$ 1,124,373	\$ 1,022,416	\$ 921,543	\$ 848,402	\$ 785,660	\$ 730,718	\$ 691,375	\$ 659,833	\$ 628,290	\$ 596,747	\$ 565,204
24	Operations & Maintenance	O&M Expense, Line 9	[REDACTED]										
25	Decommissioning Cost	Decommissioning Expense, Line 4	[REDACTED]										
26	Book Depreciation	Book Depreciation Schedule, Line 50	470,108	470,108	470,108	470,108	470,108	470,108	470,108	470,108	470,108	470,108	470,108
27	Property Taxes	Property Tax Expense, Line 4	341,311	328,205	315,098	301,991	288,885	275,778	262,672	249,565	236,458	223,352	210,245
28	PTC Flowback with Grossup	Production Tax Credit, Line - 10	(358,185)	(358,042)	(363,526)	(369,086)	(374,723)	(380,438)	(386,232)	(392,105)	(398,058)	(404,093)	(410,046)
29	Annual Revenue Requirement	Sum Lines 23 through 28	\$ 1,608,070	\$ 1,493,649	\$ 1,374,695	\$ 1,283,407	\$ 1,202,453	\$ 1,153,556	\$ 1,096,473	\$ 1,047,137	\$ 997,748	\$ 948,304	\$ 898,857
			\$ 1,594,482	\$ 1,492,525	\$ 1,391,651	\$ 1,318,510	\$ 1,255,768	\$ 1,200,826	\$ 1,161,484	\$ 1,129,941	\$ 1,098,398	\$ 1,066,856	\$ 1,035,313

Notes
 (1) Beginning in Year 11 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 1
 Beginning in Year 21 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 2

Unitil Energy Systems d/b/a Unitil
 Schedule 3
 Rate Base & Revenue Requirement

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Investments											
2	PV Modules	Capital Costs, Line 46, Maintenance Capital Costs, Line 5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3	Racking Equipment	Capital Costs, Line 47, Maintenance Capital Costs, Line 12	-	-	-	-	-	-	-	-	-	-
4	Balance of Plant	Capital Costs, Line 48										
5	Electric System Upgrades	Capital Costs, Line 49										
6	Solar Inverter 1	Capital Costs, Line 50										
7	Solar Inverter 2	Capital Costs, Line 51										
8	Solar Inverter 3	Capital Costs, Line 52										
9	Land Improvements	Capital Costs, Line 56										
10	Land Acquisition	Capital Costs, Line 57										
11	Total Investments	Sum Lines 2 through 10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
12												
13	Rate Base Calculation											
14	Gross Plant ⁽¹⁾	CY Line 11 + PY Line 14	\$ 12,828,776	\$ 12,828,776	\$ 12,828,776	\$ 12,828,776	\$ 12,828,776	\$ 12,828,776	\$ 12,828,776	\$ 12,828,776	\$ 12,828,776	\$ 12,828,776
15	Accumulated Depreciation ⁽¹⁾	Book Depreciation Schedule, Line 51	(4,650,811)	(5,132,571)	(5,614,330)	(6,096,090)	(6,577,849)	(7,059,609)	(7,541,368)	(8,023,128)	(8,504,887)	(8,986,646)
16	Net Plant	Line 14 + Line 15	8,177,965	7,696,205	7,214,446	6,732,686	6,250,927	5,769,167	5,287,408	4,805,648	4,323,889	3,842,129
17	Deferred Income Tax	Deferred Tax Calculation, Line - 28	(1,588,986)	(1,515,151)	(1,418,964)	(1,309,367)	(1,199,769)	(1,080,114)	(950,400)	(820,686)	(690,972)	(561,259)
18	Year End Rate Base	Line 16 + Line 17	\$ 6,588,978	\$ 6,181,054	\$ 5,795,482	\$ 5,423,320	\$ 5,051,158	\$ 4,689,054	\$ 4,337,008	\$ 3,984,962	\$ 3,632,917	\$ 3,280,871
19												
20	Revenue Requirement											
21	Average Rate Base	(CY Line 18 + PY Line 18) ÷ 2	\$ 6,458,192	\$ 6,385,016	\$ 5,988,268	\$ 5,609,401	\$ 5,237,239	\$ 4,870,106	\$ 4,513,031	\$ 4,160,985	\$ 3,808,939	\$ 3,456,894
22	Pre-Tax Rate of Return	Cost of Capital, Line 8, Column (f)	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%
23	Return and Taxes	Line 21 x Line 22	\$ 592,985	\$ 586,266	\$ 549,837	\$ 515,049	\$ 480,878	\$ 447,168	\$ 414,382	\$ 382,057	\$ 349,733	\$ 317,408
24	Operations & Maintenance	O&M Expense, Line 9										
25	Decommissioning Cost	Decommissioning Expense, Line 4										
26	Book Depreciation	Book Depreciation Schedule, Line 50	481,759	481,759	481,759	481,759	481,759	481,759	481,759	481,759	481,759	481,759
27	Property Taxes	Property Tax Expense, Line 4	228,002	214,570	201,139	187,707	174,276	160,844	147,413	133,981	120,550	107,119
28	PTC Flowback with Grossup	Production Tax Credit, Line - 10	-	-	-	-	-	-	-	-	-	-
29	Annual Revenue Requirement	Sum Lines 23 through 28	\$ 1,366,204	\$ 1,347,352	\$ 1,298,818	\$ 1,251,956	\$ 1,205,741	\$ 1,160,019	\$ 1,115,253	\$ 1,070,981	\$ 1,026,743	\$ 982,540
			\$ 1,074,744	\$ 1,068,025	\$ 1,031,596	\$ 996,809	\$ 962,637	\$ 928,928	\$ 896,141	\$ 863,817	\$ 831,492	\$ 799,168

Notes
 (1) Beginning in Year 11 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 1
 Beginning in Year 21 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 2

Unitil Energy Systems d/b/a Unitil
 Schedule 3
 Rate Base & Revenue Requirement

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25
1	Investments						
2	PV Modules	Capital Costs, Line 46, Maintenance Capital Costs, Line 5	\$ -	\$ -	\$ -	\$ -	\$ -
3	Racking Equipment	Capital Costs, Line 47, Maintenance Capital Costs, Line 12	-	-	-	-	-
4	Balance of Plant	Capital Costs, Line 48					
5	Electric System Upgrades	Capital Costs, Line 49					
6	Solar Inverter 1	Capital Costs, Line 50					
7	Solar Inverter 2	Capital Costs, Line 51	\$				
8	Solar Inverter 3	Capital Costs, Line 52					
9	Land Improvements	Capital Costs, Line 56					
10	Land Acquisition	Capital Costs, Line 57					
11	Total Investments	Sum Lines 2 through 10	\$	\$ -	\$ -	\$ -	\$ -
12							
13	Rate Base Calculation						
14	Gross Plant ⁽¹⁾	CY Line 11 + PY Line 14	\$ 12,970,803	\$ 12,970,803	\$ 12,970,803	\$ 12,970,803	\$ 12,970,803
15	Accumulated Depreciation ⁽¹⁾	Book Depreciation Schedule, Line 51	(8,834,066)	(9,330,028)	(9,825,990)	(10,321,953)	(10,817,915)
16	Net Plant	Line 14 + Line 15	4,136,737	3,640,775	3,144,813	2,648,851	2,152,888
17	Deferred Income Tax	Deferred Tax Calculation, Line - 28	(427,721)	(362,298)	(269,630)	(160,614)	(51,597)
18	Year End Rate Base	Line 16 + Line 17	\$ 3,709,016	\$ 3,278,477	\$ 2,875,183	\$ 2,488,237	\$ 2,101,291
19							
20	Revenue Requirement						
21	Average Rate Base	(CY Line 18 + PY Line 18) ÷ 2	\$ 3,494,944	\$ 3,493,746	\$ 3,076,830	\$ 2,681,710	\$ 2,294,764
22	Pre-Tax Rate of Return	Cost of Capital, Line 8, Column (f)	9.18%	9.18%	9.18%	9.18%	9.18%
23	Return and Taxes	Line 21 x Line 22	\$ 320,902	\$ 320,792	\$ 282,511	\$ 246,232	\$ 210,703
24	Operations & Maintenance	O&M Expense, Line 9					
25	Decommissioning Cost	Decommissioning Expense, Line 4					
26	Book Depreciation	Book Depreciation Schedule, Line 4	495,962	495,962	495,962	495,962	495,962
27	Property Taxes	Property Tax Expense, Line 4	115,332	101,505	87,677	73,850	60,023
28	PTC Flowback with Grossup	Production Tax Credit, Line - 10	-	-	-	-	-
29	Annual Revenue Requirement	Sum Lines 23 through 28	\$ 1,010,038	\$ 997,724	\$ 947,276	\$ 898,868	\$ 851,248
			\$ 816,864	\$ 816,754	\$ 778,474	\$ 742,194	\$ 706,665

Notes

(1) Beginning in Year 11 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 1
 Beginning in Year 21 Gross Plant and Accumulated Depreciation are reduced by the retirement of Solar Inverter 2

Unitil Energy Systems d/b/a Unitil
Schedule 4
Production Tax Credit

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	<u>Production Tax Credit</u>											
2	Annual Production (kWh)	Direct Customer Benefits, Line 9	9,148,370	8,965,403	8,924,235	8,883,067	8,841,900	8,800,732	8,759,564	8,718,397	8,677,229	8,636,061
3	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
4	PTC Base Credit (per kWh) ⁽¹⁾	0.0275 Escalated at Annal Rate	\$ 0.0286	\$ 0.0292	\$ 0.0298	\$ 0.0304	\$ 0.0310	\$ 0.0316	\$ 0.0322	\$ 0.0329	\$ 0.0335	\$ 0.0342
5	PTC Base Credit (Annual)	Line 2 x Line 4	\$ 261,744	\$ 261,639	\$ 265,647	\$ 269,710	\$ 273,829	\$ 278,005	\$ 282,239	\$ 286,531	\$ 290,881	\$ 295,291
6												
7	<u>Tax Gross Up</u>											
8	Production Tax Credit Tax Gross Up	Line 5 x 0.368457	\$ 96,441	\$ 96,403	\$ 97,879	\$ 99,376	\$ 100,894	\$ 102,433	\$ 103,993	\$ 105,574	\$ 107,177	\$ 108,802
9												
10	Total PTC Flowback with Gross Up	Line 5 + Line 8	\$ 358,185	\$ 358,042	\$ 363,526	\$ 369,086	\$ 374,723	\$ 380,438	\$ 386,232	\$ 392,105	\$ 398,058	\$ 404,093

Notes

(1) The Internal Revenue Service published a 2022 PTC Rate of 2.75 cents per kWh. Year 1 (2024) is the future value of the current PTC rate of 2.75 cents per kWh with 2% annual escalation rate. This does not include the 10% Bonus Credit for Domestic Content qualification

Unitil Energy Systems d/b/a Unitil
Schedule 4
Production Tax Credit

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	<u>Production Tax Credit</u>											
2	Annual Production (kWh)	Direct Customer Benefits, Line 9	8,594,894	8,553,726	8,512,558	8,471,391	8,430,223	8,389,055	8,347,888	8,306,720	8,265,552	8,224,385
3	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
4	PTC Base Credit (per kWh) ⁽¹⁾	0.0275 Escalated at Annal Rate										
5	PTC Base Credit (Annual)	Line 2 x Line 4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6												
7	<u>Tax Gross Up</u>											
8	Production Tax Credit Tax Gross Up	Line 5 x 0.368457	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9												
10	Total PTC Flowback with Gross Up	Line 5 + Line 8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Notes

(1) The Internal Revenue Service published a 2022 PTC Rate of 2.75 cents per kWh. Year 1 (2024) is the future value of the current PTC rate of 2.75 cents per kWh with 2% annual escalation rate. This does not include the 10% Bonus Credit for Domestic Content qualification

Unitil Energy Systems d/b/a Unitil
Schedule 4
Production Tax Credit

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25
1	<u>Production Tax Credit</u>						
2	Annual Production (kWh)	Direct Customer Benefits, Line 9	8,183,217	8,142,049	8,100,882	8,059,714	8,018,546
3	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%
4	PTC Base Credit (per kWh) ⁽¹⁾	0.0275 Escalated at Annal Rate					
5	PTC Base Credit (Annual)	Line 2 x Line 4	\$ -	\$ -	\$ -	\$ -	\$ -
6							
7	<u>Tax Gross Up</u>						
8	Production Tax Credit Tax Gross Up	Line 5 x 0.368457	\$ -	\$ -	\$ -	\$ -	\$ -
9							
10	Total PTC Flowback with Gross Up	Line 5 + Line 8	\$ -	\$ -	\$ -	\$ -	\$ -

Notes

(1) The Internal Revenue Service published a 2022 PTC Rate of 2.75 cents per kWh. Year 1 (2024) is the future value of the current PTC rate of 2.75 cents per kWh with 2% annual escalation rate. This does not include the 10% Bonus Credit for Domestic Content qualification

Unitil Energy Systems d/b/a Unitil
 Schedule 5a
 O&M Expense

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	<u>Vegetation Management Expense</u>		\$ [REDACTED]									
2	Annual Escalation Rate	2% Annual Escalation		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
3	Total Vegetation Management Expense	Prior Year Escalated at Annual Rate	\$ [REDACTED]	[REDACTED]								
4												
5	<u>Additional Maintenance Expense</u>							[REDACTED]				
6	Annual Escalation Rate	2.5% Annual Escalation							2.5%	2.5%	2.5%	2.5%
7	Total Additional Maintenance Expense	Prior Year Escalated at Annual Rate						[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
8												
9	O&M Expense	Line 3 + Line 7	\$ [REDACTED]	[REDACTED]								

Notes

Unitil Energy Systems d/b/a Unitil
 Schedule 5a
 O&M Expense

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	<u>Vegetation Management Expense</u>											
2	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
3	Total Vegetation Management Expense	Prior Year Escalated at Annual Rate	\$ [REDACTED]	[REDACTED]								
4												
5	<u>Additional Maintenance Expense</u>											
6	Annual Escalation Rate	2.5% Annual Escalation	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
7	Total Additional Maintenance Expense	Prior Year Escalated at Annual Rate	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
8												
9	O&M Expense	Line 3 + Line 7	\$ [REDACTED]	[REDACTED]								

Notes

Unitil Energy Systems d/b/a Unitil
 Schedule 5a
 O&M Expense

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25
1	<u>Vegetation Management Expense</u>						
2	Annual Escalation Rate	2% Annual Escalation	2.0%	2.0%	2.0%	2.0%	2.0%
3	Total Vegetation Management Expense	Prior Year Escalated at Annual Rate	\$ [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
4							
5	<u>Additional Maintenance Expense</u>						
6	Annual Escalation Rate	2.5% Annual Escalation	2.5%	2.5%	2.5%	2.5%	2.5%
7	Total Additional Maintenance Expense	Prior Year Escalated at Annual Rate	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
8							
9	O&M Expense	Line 3 + Line 7	\$ [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Notes

Unitil Energy Systems d/b/a Unitil
 Schedule 5b
 Decommissioning Expense

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25
1	Decommissioning Expense in Year 1 Dollars						
2	Annual Escalation Rate	2% Annual Escalation					
3	Future Value of Decommissioning Expense	Future Value of Line 1 at Annual Escalation Rate					
4	Straight-Lined Decommissioning Expense	Line 3 Straight-lined Across Facility Life	\$				

Unitil Energy Systems d/b/a Unitil
Schedule 6
Property Tax Expense

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	<u>Property Tax Expense</u>											
2	Net Plant	Rate Base & Revenue Requirement, Line 16	\$ 12,242,156	\$ 11,772,048	\$ 11,301,939	\$ 10,831,831	\$ 10,361,723	\$ 9,891,614	\$ 9,421,506	\$ 8,951,398	\$ 8,481,290	\$ 8,011,181
3	Property Tax Rate per \$1000	Kingston, NH Rate of \$21.28 + NH State Rate \$6.60	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88
4	Annual Property Tax	Line 2 x (Line 3 ÷ 1000)	\$ 341,311	\$ 328,205	\$ 315,098	\$ 301,991	\$ 288,885	\$ 275,778	\$ 262,672	\$ 249,565	\$ 236,458	\$ 223,352

Unitil Energy Systems d/b/a Unitil
Schedule 6
Property Tax Expense

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	<u>Property Tax Expense</u>											
2	Net Plant	Rate Base & Revenue Requirement, Line 16	\$ 8,177,965	\$ 7,696,205	\$ 7,214,446	\$ 6,732,686	\$ 6,250,927	\$ 5,769,167	\$ 5,287,408	\$ 4,805,648	\$ 4,323,889	\$ 3,842,129
3	Property Tax Rate per \$1000	Kingston, NH Rate of \$21.28 + NH State Rate \$6.60	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88
4	Annual Property Tax	Line 2 x (Line 3 ÷ 1000)	\$ 228,002	\$ 214,570	\$ 201,139	\$ 187,707	\$ 174,276	\$ 160,844	\$ 147,413	\$ 133,981	\$ 120,550	\$ 107,119

Unitil Energy Systems d/b/a Unitil
Schedule 6
Property Tax Expense

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25
1	<u>Property Tax Expense</u>						
2	Net Plant	Rate Base & Revenue Requirement, Line 16	\$ 4,136,737	\$ 3,640,775	\$ 3,144,813	\$ 2,648,851	\$ 2,152,888
3	Property Tax Rate per \$1000	Kingston, NH Rate of \$21.28 + NH State Rate \$6.60	27.88	27.88	27.88	27.88	27.88
4	Annual Property Tax	Line 2 x (Line 3 ÷ 1000)	\$ 115,332	\$ 101,505	\$ 87,677	\$ 73,850	\$ 60,023

Unitil Energy Systems d/b/a Unitil
 Schedule 7
 Deferred Tax Calculation

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	<u>Deferred Tax Calculation</u>											
2	Annual Federal Tax Depreciation	Tax Depreciation Schedule, Line 37, Tax Depreciation Schedule - Maintenance Capital Cost, Line 67	\$									
3	Cumulative Federal Tax Depreciation	CY Line 2 + PY Line 3	\$									
4												
5	Total Annual State Tax Depreciation	Tax Depreciation Schedule, Line 39, Tax Depreciation Schedule - Maintenance Capital Cost, Line 68	\$									
6	Cumulative State Tax Depreciation	CY Line 5 + PY Line 6	\$									
7												
8	Book Depreciation: PV Modules	Book Depreciation Schedule, Line 5	\$									
9	Book Depreciation: Racking Equipment	Book Depreciation Schedule, Line 12										
10	Book Depreciation: Balance of Plant	Book Depreciation Schedule, Line 19										
11	Book Depreciation: Electric System Upgrades	Book Depreciation Schedule, Line 26										
12	Book Depreciation: Solar Inverter 1	Book Depreciation Schedule, Line 33	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
13	Book Depreciation: Solar Inverter 2	Book Depreciation Schedule, Line 40	-	-	-	-	-	-	-	-	-	-
14	Book Depreciation: Solar Inverter 3	Book Depreciation Schedule, Line 47										
15	Total Book Depreciation	Sum Lines 8 through 13										
16	Cumulative Book Depreciation	CY Line 15 + PY Line 16	\$									
17												
18	Cumulative Book / Tax Timer	Line 3 - Line 16	\$									
19	Federal Tax Rate	Cost of Capital, Line 14 Column (a)	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%
20	Deferred Federal Tax Reserve	Line 18 x Line 19										
21	Less: Federal Deduction for Deferred State Taxes	Line 19 x - Line 26										
22	Net Deferred Federal Tax Reserve	Line 20 + Line 21	\$									
23												
24	Cumulative Book / Tax Timer	Line 6 - Line 16	\$									
25	State Tax Rate	Cost of Capital, Line 12 Column (a)	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
26	Deferred State Tax Reserve	Line 24 x Line 25	\$									
27												
28	Total Deferred Taxes	Line 22 + Line 26	\$ 463,332	\$ 1,280,609	\$ 1,720,344	\$ 1,933,555	\$ 2,146,765	\$ 2,190,082	\$ 2,063,506	\$ 1,936,929	\$ 1,810,352	\$ 1,683,776

Unitil Energy Systems d/b/a Unitil
 Schedule 7
 Deferred Tax Calculation

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20										
1	<u>Deferred Tax Calculation</u>																					
2	Annual Federal Tax Depreciation	Tax Depreciation Schedule, Line 37, Tax Depreciation Schedule - Maintenance Capital Cost, Line 67	\$						\$													
3	Cumulative Federal Tax Depreciation	CY Line 2 + PY Line 3	\$																			
4																						
5	Total Annual State Tax Depreciation	Tax Depreciation Schedule, Line 39, Tax Depreciation Schedule - Maintenance Capital Cost, Line 68	\$						\$													
6	Cumulative State Tax Depreciation	CY Line 5 + PY Line 6	\$																			
7																						
8	Book Depreciation: PV Modules	Book Depreciation Schedule, Line 5																				
9	Book Depreciation: Racking Equipment	Book Depreciation Schedule, Line 12																				
10	Book Depreciation: Balance of Plant	Book Depreciation Schedule, Line 19																				
11	Book Depreciation: Electric System Upgrades	Book Depreciation Schedule, Line 26																				
12	Book Depreciation: Solar Inverter 1	Book Depreciation Schedule, Line 33	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000										
13	Book Depreciation: Solar Inverter 2	Book Depreciation Schedule, Line 40																				
14	Book Depreciation: Solar Inverter 3	Book Depreciation Schedule, Line 47																				
15	Total Book Depreciation	Sum Lines 8 through 13																				
16	Cumulative Book Depreciation	CY Line 15 + PY Line 16																				
17																						
18	Cumulative Book / Tax Timer	Line 3 - Line 16																				
19	Federal Tax Rate	Cost of Capital, Line 14 Column (a)	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%										
20	Deferred Federal Tax Reserve	Line 18 x Line 19																				
21	Less: Federal Deduction for Deferred State Taxes	Line 19 x - Line 26																				
22	Net Deferred Federal Tax Reserve	Line 20 + Line 21																				
23																						
24	Cumulative Book / Tax Timer	Line 6 - Line 16																				
25	State Tax Rate	Cost of Capital, Line 12 Column (a)	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%										
26	Deferred State Tax Reserve	Line 24 x Line 25	\$																			
27																						
28	Total Deferred Taxes	Line 22 + Line 26	\$	1,588,986	\$	1,515,151	\$	1,418,964	\$	1,309,367	\$	1,199,769	\$	1,080,114	\$	950,400	\$	820,686	\$	690,972	\$	561,259

Unitil Energy Systems d/b/a Unitil
 Schedule 7
 Deferred Tax Calculation

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25
1	<u>Deferred Tax Calculation</u>						
2	Annual Federal Tax Depreciation	Tax Depreciation Schedule, Line 37, Tax Depreciation Schedule - Maintenance Capital Cost, Line 67	\$	\$			
3	Cumulative Federal Tax Depreciation	CY Line 2 + PY Line 3	\$	\$			
4							
5	Total Annual State Tax Depreciation	Tax Depreciation Schedule, Line 39, Tax Depreciation Schedule - Maintenance Capital Cost, Line 68					
6	Cumulative State Tax Depreciation	CY Line 5 + PY Line 6					
7							
8	Book Depreciation: PV Modules	Book Depreciation Schedule, Line 5					
9	Book Depreciation: Racking Equipment	Book Depreciation Schedule, Line 12					
10	Book Depreciation: Balance of Plant	Book Depreciation Schedule, Line 19					
11	Book Depreciation: Electric System Upgrades	Book Depreciation Schedule, Line 26	24,000	24,000	24,000	24,000	24,000
12	Book Depreciation: Solar Inverter 1	Book Depreciation Schedule, Line 33	-	-	-	-	-
13	Book Depreciation: Solar Inverter 2	Book Depreciation Schedule, Line 40	-	-	-	-	-
14	Book Depreciation: Solar Inverter 3	Book Depreciation Schedule, Line 47	-	-	-	-	-
15	Total Book Depreciation	Sum Lines 8 through 13					
16	Cumulative Book Depreciation	CY Line 15 + PY Line 16					
17							
18	Cumulative Book / Tax Timer	Line 3 - Line 16					
19	Federal Tax Rate	Cost of Capital, Line 14 Column (a)	21.00%	21.00%	21.00%	21.00%	21.00%
20	Deferred Federal Tax Reserve	Line 18 x Line 19					
21	Less: Federal Deduction for Deferred State Taxes	Line 19 x - Line 26					
22	Net Deferred Federal Tax Reserve	Line 20 + Line 21					
23							
24	Cumulative Book / Tax Timer	Line 6 - Line 16					
25	State Tax Rate	Cost of Capital, Line 12 Column (a)	7.50%	7.50%	7.50%	7.50%	7.50%
26	Deferred State Tax Reserve	Line 24 x Line 25	\$	\$	\$	\$	\$
27							
28	Total Deferred Taxes	Line 22 + Line 26	\$ 427,721	\$ 362,298	\$ 269,630	\$ 160,614	\$ 51,597

Unitil Energy Systems d/b/a Unitil
 Schedule 8
 Book Depreciation Schedule

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	<u>25 Year Property</u>											
2	PV Modules	Capital Costs, Line 46	\$ [REDACTED]	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3	Cumulative Capital Investment	CY Line 2 + PY Line 3	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
4	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
5	Annual Book Depreciation	Line 3 x Line 4	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
6	Cumulative Book Depreciation	CY Line 5 + PY Line 6	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
7												
8	<u>25 Year Property</u>											
9	Racking Equipment	Capital Costs, Line 47	\$ [REDACTED]	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
10	Cumulative Capital Investment	CY Line 9 + PY Line 10	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
11	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
12	Annual Book Depreciation	Line 10 x Line 11	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
13	Cumulative Book Depreciation	CY Line 12 + PY Line 13	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
14												
15	<u>25 Year Property</u>											
16	Balance of Plant	Capital Costs, Line 48	\$ [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
17	Cumulative Capital Investment	CY Line 16 + PY Line 17	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
18	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
19	Annual Book Depreciation	Line 17 x Line 18	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
20	Cumulative Book Depreciation	CY Line 19 + PY Line 20	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
21												
22	<u>25 Year Property</u>											
23	Electric System Upgrades	Capital Costs, Line 49	\$ 600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
24	Cumulative Capital Investment	CY Line 23 + PY Line 24	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
25	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
26	Annual Book Depreciation	Line 24 x Line 25	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
27	Cumulative Book Depreciation	CY Line 26 + PY Line 27	\$ 24,000	\$ 48,000	\$ 72,000	\$ 96,000	\$ 120,000	\$ 144,000	\$ 168,000	\$ 192,000	\$ 216,000	\$ 240,000
28												
29	<u>10 Year Property</u>											
30	Solar Inverter 1	Capital Costs, Line 50	\$ [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
31	Cumulative Capital Investment	CY Line 30 + PY Line 31	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
32	Annual Depreciation Rate	Annual Depreciation Rate @ 10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
33	Annual Book Depreciation	Line 31 x Line 32	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
34	Cumulative Book Depreciation	CY Line 33 + PY Line 34	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
35												
36	<u>10 Year Property</u>											
37	Solar Inverter 2	Capital Costs, Line 51	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
38	Cumulative Capital Investment	CY Line 37 + PY Line 38	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
39	Annual Depreciation Rate	Annual Depreciation Rate @ 10.0%	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
40	Annual Book Depreciation	Line 38 x Line 39	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
41	Cumulative Book Depreciation	CY Line 40 + PY Line 41	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
42												
43	<u>10 Year Property</u>											
44	Solar Inverter 3	Capital Costs, Line 52	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
45	Cumulative Capital Investment	CY Line 44 + PY Line 45	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
46	Annual Depreciation Rate	Annual Depreciation Rate @ 10.0%	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
47	Annual Book Depreciation	Line 45 x Line 46	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
48	Cumulative Book Depreciation	CY Line 47 + PY Line 48	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
49												
50	Total Annual Book Depreciation	Sum Lines 5, 12, 19, 26, 33, 40, and 47	\$ 470,108	\$ 470,108	\$ 470,108	\$ 470,108	\$ 470,108	\$ 470,108	\$ 470,108	\$ 470,108	\$ 470,108	\$ 470,108
51	Total Cumulative Book Depreciation	CY Line 50 + PY Line 51	\$ 470,108	\$ 940,217	\$ 1,410,325	\$ 1,880,433	\$ 2,350,541	\$ 2,820,650	\$ 3,290,758	\$ 3,760,866	\$ 4,230,975	\$ 4,701,083

Unitil Energy Systems d/b/a Unitil
 Schedule 8
 Book Depreciation Schedule

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	<u>25 Year Property</u>											
2	PV Modules	Capital Costs, Line 46	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3	Cumulative Capital Investment	CY Line 2 + PY Line 3										
4	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
5	Annual Book Depreciation	Line 3 x Line 4										
6	Cumulative Book Depreciation	CY Line 5 + PY Line 6										
7												
8	<u>25 Year Property</u>											
9	Racking Equipment	Capital Costs, Line 47	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
10	Cumulative Capital Investment	CY Line 9 + PY Line 10										
11	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
12	Annual Book Depreciation	Line 10 x Line 11										
13	Cumulative Book Depreciation	CY Line 12 + PY Line 13										
14												
15	<u>25 Year Property</u>											
16	Balance of Plant	Capital Costs, Line 48										
17	Cumulative Capital Investment	CY Line 16 + PY Line 17										
18	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
19	Annual Book Depreciation	Line 17 x Line 18										
20	Cumulative Book Depreciation	CY Line 19 + PY Line 20										
21												
22	<u>25 Year Property</u>											
23	Electric System Upgrades	Capital Costs, Line 49	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
24	Cumulative Capital Investment	CY Line 23 + PY Line 24										
25	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
26	Annual Book Depreciation	Line 24 x Line 25	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
27	Cumulative Book Depreciation	CY Line 26 + PY Line 27	\$ 264,000	\$ 288,000	\$ 312,000	\$ 336,000	\$ 360,000	\$ 384,000	\$ 408,000	\$ 432,000	\$ 456,000	\$ 480,000
28												
29	<u>10 Year Property</u>											
30	Solar Inverter 1	Capital Costs, Line 50										
31	Cumulative Capital Investment	CY Line 30 + PY Line 31										
32	Annual Depreciation Rate	Annual Depreciation Rate @ 10.0%										
33	Annual Book Depreciation	Line 31 x Line 32										
34	Cumulative Book Depreciation	CY Line 33 + PY Line 34										
35												
36	<u>10 Year Property</u>											
37	Solar Inverter 2	Capital Costs, Line 51	\$									
38	Cumulative Capital Investment	CY Line 37 + PY Line 38										
39	Annual Depreciation Rate	Annual Depreciation Rate @ 10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
40	Annual Book Depreciation	Line 38 x Line 39										
41	Cumulative Book Depreciation	CY Line 40 + PY Line 41										
42												
43	<u>10 Year Property</u>											
44	Solar Inverter 3	Capital Costs, Line 52										
45	Cumulative Capital Investment	CY Line 44 + PY Line 45										
46	Annual Depreciation Rate	Annual Depreciation Rate @ 10.0%										
47	Annual Book Depreciation	Line 45 x Line 46										
48	Cumulative Book Depreciation	CY Line 47 + PY Line 48										
49												
50	Total Annual Book Depreciation	Sum Lines 5, 12, 19, 26, 33, 40, and 47	\$ 481,759	\$ 481,759	\$ 481,759	\$ 481,759	\$ 481,759	\$ 481,759	\$ 481,759	\$ 481,759	\$ 481,759	\$ 481,759
51	Total Cumulative Book Depreciation	CY Line 50 + PY Line 51	\$ 5,182,842	\$ 5,664,602	\$ 6,146,361	\$ 6,628,121	\$ 7,109,880	\$ 7,591,640	\$ 8,073,399	\$ 8,555,158	\$ 9,036,918	\$ 9,518,677

Unitil Energy Systems d/b/a Unitil
 Schedule 8
 Book Depreciation Schedule

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25
1	<u>25 Year Property</u>						
2	PV Modules	Capital Costs, Line 46	\$ -	\$ -	\$ -	\$ -	\$ -
3	Cumulative Capital Investment	CY Line 2 + PY Line 3					
4	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
5	Annual Book Depreciation	Line 3 x Line 4					
6	Cumulative Book Depreciation	CY Line 5 + PY Line 6					
7							
8	<u>25 Year Property</u>						
9	Racking Equipment	Capital Costs, Line 47	\$ -	\$ -	\$ -	\$ -	\$ -
10	Cumulative Capital Investment	CY Line 9 + PY Line 10					
11	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
12	Annual Book Depreciation	Line 10 x Line 11					
13	Cumulative Book Depreciation	CY Line 12 + PY Line 13					
14							
15	<u>25 Year Property</u>						
16	Balance of Plant	Capital Costs, Line 48					
17	Cumulative Capital Investment	CY Line 16 + PY Line 17					
18	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
19	Annual Book Depreciation	Line 17 x Line 18					
20	Cumulative Book Depreciation	CY Line 19 + PY Line 20					
21							
22	<u>25 Year Property</u>						
23	Electric System Upgrades	Capital Costs, Line 49					
24	Cumulative Capital Investment	CY Line 23 + PY Line 24	600,000	600,000	600,000	600,000	600,000
25	Annual Depreciation Rate	Annual Depreciation Rate @ 4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
26	Annual Book Depreciation	Line 24 x Line 25	24,000	24,000	24,000	24,000	24,000
27	Cumulative Book Depreciation	CY Line 26 + PY Line 27	\$ 504,000	\$ 528,000	\$ 552,000	\$ 576,000	\$ 600,000
28							
29	<u>10 Year Property</u>						
30	Solar Inverter 1	Capital Costs, Line 50					
31	Cumulative Capital Investment	CY Line 30 + PY Line 31					
32	Annual Depreciation Rate	Annual Depreciation Rate @ 10.0%					
33	Annual Book Depreciation	Line 31 x Line 32					
34	Cumulative Book Depreciation	CY Line 33 + PY Line 34					
35							
36	<u>10 Year Property</u>						
37	Solar Inverter 2	Capital Costs, Line 51					
38	Cumulative Capital Investment	CY Line 37 + PY Line 38					
39	Annual Depreciation Rate	Annual Depreciation Rate @ 10.0%					
40	Annual Book Depreciation	Line 38 x Line 39					
41	Cumulative Book Depreciation	CY Line 40 + PY Line 41					
42							
43	<u>10 Year Property</u>						
44	Solar Inverter 3	Capital Costs, Line 52	\$				
45	Cumulative Capital Investment	CY Line 44 + PY Line 45					
46	Annual Depreciation Rate	Annual Depreciation Rate @ 10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
47	Annual Book Depreciation	Line 45 x Line 46					
48	Cumulative Book Depreciation	CY Line 47 + PY Line 48					
49							
50	Total Annual Book Depreciation	Sum Lines 5, 12, 19, 26, 33, 40, and 47	\$ 495,962	\$ 495,962	\$ 495,962	\$ 495,962	\$ 495,962
51	Total Cumulative Book Depreciation	CY Line 50 + PY Line 51	\$ 10,014,640	\$ 10,510,602	\$ 11,006,564	\$ 11,502,526	\$ 11,998,488

Unitil Energy Systems d/b/a Unitil
 Schedule 9
 Tax Depreciation Schedule

Line No.	Description	Reference	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1												
2	<u>PV Modules and Associated Materials</u>	Capital Costs, Line 46	\$									
3	Cumulative Investment Tax Basis	CY Line 2 + PY Line 3										
4	Annual 5 Year MACRS	MACRS Rate Table, Line 2	20.00%	32.00%	19.20%	11.52%	11.52%	5.76%				
5	Tax Depreciation	Line 3 x Line 4										
6												
7	<u>Racking Equipment and Associated Materials</u>	Capital Costs, Line 47	\$									
8	Cumulative Investment Tax Basis	CY Line 7 + PY Line 8										
9	Annual 5 Year MACRS	MACRS Rate Table, Line 2	20.00%	32.00%	19.20%	11.52%	11.52%	5.76%				
10	Tax Depreciation	Line 8 x Line 9										
11												
12	<u>Balance of Plant</u>	Capital Costs, Line 48	\$									
13	Cumulative Investment Tax Basis	CY Line 12 + PY Line 13										
14	Annual 5 Year MACRS	MACRS Rate Table, Line 2	20.00%	32.00%	19.20%	11.52%	11.52%	5.76%				
15	Tax Depreciation	Line 13 x Line 14										
16												
17	<u>Electric System Upgrades</u>	Capital Costs, Line 49	\$	600,000								
18	Cumulative Investment Tax Basis	CY Line 17 + PY Line 18		600,000	600,000	600,000	600,000	600,000	600,000			
19	Annual 5 Year MACRS	MACRS Rate Table, Line 2	20.00%	32.00%	19.20%	11.52%	11.52%	5.76%				
20	Tax Depreciation	Line 18 x Line 19		120,000	192,000	115,200	69,120	69,120	34,560			
21												
22	<u>Solar Inverter 1</u>	Capital Costs, Line 50	\$									
23	Cumulative Investment Tax Basis	CY Line 22 + PY Line 23										
24	Annual 5 Year MACRS	MACRS Rate Table, Line 2	20.00%	32.00%	19.20%	11.52%	11.52%	5.76%				
25	Tax Depreciation	Line 23 x Line 24										
26												
27	<u>Solar Inverter 2</u>	Capital Costs, Line 51										
28	Cumulative Investment Tax Basis	CY Line 27 + PY Line 28										
29	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
30	Tax Depreciation	Line 28 x Line 29										
31												
32	<u>Solar Inverter 3</u>	Capital Costs, Line 52										
33	Cumulative Investment Tax Basis	CY Line 32 + PY Line 33										
34	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
35	Tax Depreciation	Line 33 x Line 34										
36												
37	Total Federal Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$							\$ -	\$ -	\$ -
38												
39	Total State Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$							\$ -	\$ -	\$ -

Notes
 (1) Federal & State Tax are calculated at the same MACRS rate on Tax Depreciation Schedule and then used to calculate Deferred Taxes on Deferred Tax Calculation Schedule

Unitil Energy Systems d/b/a Unitil
 Schedule 9
 Tax Depreciation Schedule

Line No.	Description	Reference	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1												
2	<u>PV Modules and Associated Materials</u>	Capital Costs, Line 46										
3	Cumulative Investment Tax Basis	CY Line 2 + PY Line 3										
4	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
5	Tax Depreciation	Line 3 x Line 4										
6												
7	<u>Racking Equipment and Associated Materials</u>	Capital Costs, Line 47										
8	Cumulative Investment Tax Basis	CY Line 7 + PY Line 8										
9	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
10	Tax Depreciation	Line 8 x Line 9										
11												
12	<u>Balance of Plant</u>	Capital Costs, Line 48										
13	Cumulative Investment Tax Basis	CY Line 12 + PY Line 13										
14	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
15	Tax Depreciation	Line 13 x Line 14										
16												
17	<u>Electric System Upgrades</u>	Capital Costs, Line 49										
18	Cumulative Investment Tax Basis	CY Line 17 + PY Line 18										
19	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
20	Tax Depreciation	Line 18 x Line 19										
21												
22	<u>Solar Inverter 1</u>	Capital Costs, Line 50										
23	Cumulative Investment Tax Basis	CY Line 22 + PY Line 23										
24	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
25	Tax Depreciation	Line 23 x Line 24										
26												
27	<u>Solar Inverter 2</u>	Capital Costs, Line 51	\$									
28	Cumulative Investment Tax Basis	CY Line 27 + PY Line 28										
29	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
30	Tax Depreciation	Line 28 x Line 29	\$	20.00%	32.00%	19.20%	11.52%	11.52%	5.76%			
31												
32	<u>Solar Inverter 3</u>	Capital Costs, Line 52										
33	Cumulative Investment Tax Basis	CY Line 32 + PY Line 33										
34	Annual 5 Year MACRS	MACRS Rate Table, Line 2										
35	Tax Depreciation	Line 33 x Line 34										
36												
37	Total Federal Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$							\$ -	\$ -	\$ -
38												
39	Total State Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$							\$ -	\$ -	\$ -

Notes
 (1) Federal & State Tax are calculated at the same MACRS rate on Tax Depreciation Schedule and then used to calculate Deferred Taxes on Deferred Tax Calculation Schedule

Unitil Energy Systems d/b/a Unitil
 Schedule 9
 Tax Depreciation Schedule

Line No.	Description	Reference	Year 21	Year 22	Year 23	Year 24	Year 25
1							
2	<u>PV Modules and Associated Materials</u>	Capital Costs, Line 46					
3	Cumulative Investment Tax Basis	CY Line 2 + PY Line 3					
4	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
5	Tax Depreciation	Line 3 x Line 4					
6							
7	<u>Racking Equipment and Associated Materials</u>	Capital Costs, Line 47					
8	Cumulative Investment Tax Basis	CY Line 7 + PY Line 8					
9	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
10	Tax Depreciation	Line 8 x Line 9					
11							
12	<u>Balance of Plant</u>	Capital Costs, Line 48					
13	Cumulative Investment Tax Basis	CY Line 12 + PY Line 13					
14	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
15	Tax Depreciation	Line 13 x Line 14					
16							
17	<u>Electric System Upgrades</u>	Capital Costs, Line 49					
18	Cumulative Investment Tax Basis	CY Line 17 + PY Line 18					
19	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
20	Tax Depreciation	Line 18 x Line 19					
21							
22	<u>Solar Inverter 1</u>	Capital Costs, Line 50					
23	Cumulative Investment Tax Basis	CY Line 22 + PY Line 23					
24	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
25	Tax Depreciation	Line 23 x Line 24					
26							
27	<u>Solar Inverter 2</u>	Capital Costs, Line 51					
28	Cumulative Investment Tax Basis	CY Line 27 + PY Line 28					
29	Annual 5 Year MACRS	MACRS Rate Table, Line 2					
30	Tax Depreciation	Line 28 x Line 29					
31							
32	<u>Solar Inverter 3</u>	Capital Costs, Line 52	\$				
33	Cumulative Investment Tax Basis	CY Line 32 + PY Line 33					
34	Annual 5 Year MACRS	MACRS Rate Table, Line 2	20.00%	32.00%	19.20%	11.52%	11.52%
35	Tax Depreciation	Line 33 x Line 34	\$ -				
36							
37	Total Federal Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$ -				
38							
39	Total State Tax Depreciation ⁽¹⁾	Sum Lines 5, 10, 15, 20, 25, 30, and 35	\$ -				

Notes

(1) Federal & State Tax are calculated at the same MACRS rate on Tax Depreciation Schedule and then used to calculate Deferred Taxes on Deferred Tax Calculation Schedule

Unitil Energy Systems d/b/a Unitil
Schedule 10
Tax Depreciation Schedule Maintenance Capital Cost

Line No.	Description	(a)	(b) Reference	(w) Year 21	(x) Year 22	(y) Year 23	(z) Year 24	(aa) Year 25
1	5 Year MACRS		MACRS Half Year Depreciation Rates, Line 2					
2								
3	<u>25 Year Property</u>							
4	PV Modules							
5								
6	Column Reference	Maintenance Capital Costs, Line 5						
7	Year 1		Column (a) spread by 5 Year MACRS on Line 1					
8	Year 2		Column (a) spread by 5 Year MACRS on Line 1					
9	Year 3		Column (a) spread by 5 Year MACRS on Line 1					
10	Year 4		Column (a) spread by 5 Year MACRS on Line 1					
11	Year 5		Column (a) spread by 5 Year MACRS on Line 1					
12	Year 6		Column (a) spread by 5 Year MACRS on Line 1					
13	Year 7		Column (a) spread by 5 Year MACRS on Line 1					
14	Year 8		Column (a) spread by 5 Year MACRS on Line 1					
15	Year 9		Column (a) spread by 5 Year MACRS on Line 1					
16	Year 10		Column (a) spread by 5 Year MACRS on Line 1					
17	Year 11		Column (a) spread by 5 Year MACRS on Line 1					
18	Year 12		Column (a) spread by 5 Year MACRS on Line 1					
19	Year 13		Column (a) spread by 5 Year MACRS on Line 1					
20	Year 14		Column (a) spread by 5 Year MACRS on Line 1					
21	Year 15		Column (a) spread by 5 Year MACRS on Line 1					
22	Year 16		Column (a) spread by 5 Year MACRS on Line 1					
23	Year 17		Column (a) spread by 5 Year MACRS on Line 1					
24	Year 18		Column (a) spread by 5 Year MACRS on Line 1					
25	Year 19		Column (a) spread by 5 Year MACRS on Line 1					
26	Year 20		Column (a) spread by 5 Year MACRS on Line 1					
27	Year 21		Column (a) spread by 5 Year MACRS on Line 1					
28	Year 22		Column (a) spread by 5 Year MACRS on Line 1					
29	Year 23		Column (a) spread by 5 Year MACRS on Line 1					
30	Year 24		Column (a) spread by 5 Year MACRS on Line 1					
31	Year 25		Column (a) spread by 5 Year MACRS on Line 1					
32	Federal Tax Depreciation		Sum Lines 7 through 31					
33	State Tax Depreciation		Sum Lines 7 through 31					
34								
35	<u>25 Year Property</u>							
36	Racking							
37								
38	Column Reference	Maintenance Capital Costs, Line 12						
39	Year 1	\$	Column (a) spread by 5 Year MACRS on Line 1					
40	Year 2	\$	Column (a) spread by 5 Year MACRS on Line 1					
41	Year 3	\$	Column (a) spread by 5 Year MACRS on Line 1					
42	Year 4	\$	Column (a) spread by 5 Year MACRS on Line 1					
43	Year 5	\$	Column (a) spread by 5 Year MACRS on Line 1					
44	Year 6	\$	Column (a) spread by 5 Year MACRS on Line 1					
45	Year 7	\$	Column (a) spread by 5 Year MACRS on Line 1					
46	Year 8	\$	Column (a) spread by 5 Year MACRS on Line 1					
47	Year 9	\$	Column (a) spread by 5 Year MACRS on Line 1					
48	Year 10	\$	Column (a) spread by 5 Year MACRS on Line 1					
49	Year 11	\$	Column (a) spread by 5 Year MACRS on Line 1					
50	Year 12	\$	Column (a) spread by 5 Year MACRS on Line 1					
51	Year 13	\$	Column (a) spread by 5 Year MACRS on Line 1					
52	Year 14	\$	Column (a) spread by 5 Year MACRS on Line 1					
53	Year 15	\$	Column (a) spread by 5 Year MACRS on Line 1					
54	Year 16	\$	Column (a) spread by 5 Year MACRS on Line 1					
55	Year 17	\$	Column (a) spread by 5 Year MACRS on Line 1					
56	Year 18	\$	Column (a) spread by 5 Year MACRS on Line 1					
57	Year 19	\$	Column (a) spread by 5 Year MACRS on Line 1					
58	Year 20	\$	Column (a) spread by 5 Year MACRS on Line 1					
59	Year 21	\$	Column (a) spread by 5 Year MACRS on Line 1					
60	Year 22	\$	Column (a) spread by 5 Year MACRS on Line 1					
61	Year 23	\$	Column (a) spread by 5 Year MACRS on Line 1					
62	Year 24	\$	Column (a) spread by 5 Year MACRS on Line 1					
63	Year 25	\$	Column (a) spread by 5 Year MACRS on Line 1					
64	Federal Tax Depreciation		Sum Lines 39 through 63					
65	State Tax Depreciation		Sum Lines 39 through 63					
66								
67	Total Federal Tax Depreciation		Line 32 + Line 64	\$	\$	\$	\$	\$
68	Total State Tax Depreciation		Line 33 + Line 65	\$	\$	\$	\$	\$

Unitol Energy Systems d/b/a Unitol
 Schedule 11
 Capital Cost Estimate Schedule

Line No.	Description	Reference	(a)	(b)	(c)
1	Detailed Capital Cost Estimates				
2					
3	Facility Costs				
4	Solar Inverter 1 and Associated Material		\$	Cost	Labor Adjustment 5.1%
5	PV Modules and Associated Material				\$ Labor Adjusted ⁽¹⁾ 40.9%
6	Racking Equipment and Associated Materials				29.8%
7	Step-up Transformer and Associated Material				6.3%
8	Fencing				3.1%
9	All Other Material				10.9%
10	Project Management				0.0%
11	5-Year Maintenance				1.4%
12	Construction Field Representative				0.0%
13	Spare Step-Up Transformer				2.4%
14	Spare Inverter				0.0%
15	Spare PV Modules (5)				0.0%
16	Other Rec. Spare Equipment				0.0%
17	Labor & Engineering				0.0%
18	Total Facility Costs	Sum Lines 4 through 17	\$		100.0% \$
19					
20	Electric System Upgrades				
21	System Impact Study		\$	Cost 75,000	
22	POI Material & Installation			350,000	
23	Tap 3345 Line with GOAB			50,000	
24	Kingston Relaying Upgrades			125,000	
25	Total Electric System Upgrades	Sum Lines 21 through 24	\$	600,000	
26					
27	Land Improvements				
28	Site Due Diligence, Design and Permitting		\$	Cost	
29	Site Work			743,801	
30	Total Land Improvements	Line 28 + Line 29	\$		
31					
32	Land Acquisition Costs				
33	Site Identification		\$	Cost 25,000	
34	Purchase Price				
35	Transfer Tax				
36	Commission covered by Unitol				
37	CU Penalty				
38	Title Search			10,500	
39	Appraisal				
40	Total Land Acquisitions Costs		\$	1,640,876	
41					
42	Total Capital Costs	Line 18 + Line 25 + Line 30 + Line 40	\$	13,532,702	

Line No.	Description	Reference	(a)
43	Summarized Capital Cost Estimates		
44			
45	Depreciable Plant Additions		
46	PV Modules and Associated Materials	Line 5, Column (c)	\$
47	Racking Equipment and Associated Materials	Line 6, Column (c)	
48	Balance of Plant	Sum Column (c) Lines 7 through 16	
49	Electric System Upgrades	Line 25, Column (a)	600,000
50	Solar Inverter 1	Line 4, Column (c)	
51	Solar Inverter 2 (Year 10) ⁽²⁾	Future Value of Solar Inverter 1	
52	Solar Inverter 3 (Year 20) ⁽²⁾	Future Value of Solar Inverter 2	
53	Total	Sum Lines 46 through 51	\$ 12,393,773
54			
55	Non-Depreciable Plant Additions⁽³⁾		
56	Land Improvements	Line 30	\$
57	Land Acquisition Costs	Line 40 x 50%	820,438
58	Total	Line 56 + Line 57	\$

Notes

- (1) Labor and Facility Engineering allocated based on proportional cost of line item
- (2) Assumes a 10-year life, adjusted for inflation
- (3) Including 50% of total Land Acquisition Costs to estimate cost transferred to UES

Unitil Energy Systems d/b/a Unitil
 Schedule 12
 Maintenance Capital Costs

Line No.	Description	Reference	(a) Year 0	(b) Year 1	(c) Year 2	(d) Year 3	(e) Year 4	(f) Year 5	(g) Year 6	(h) Year 7	(i) Year 8	(j) Year 9	(k) Year 10
1	PV Modules & Associated Materials												
2	Original Cost	Capital Cost Estimate Schedule, Line 46	[REDACTED]										
3	Expected Replacement % ⁽¹⁾			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
4	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate		\$1.02	1.04	1.06	1.08	1.10	1.13	1.15	1.17	1.20	1.22
5	Annual Maintenance Cost	Line 2 x Line 3 x Line 4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6													
7													
8	Racking Equipment & Associated Materials												
9	Original Cost	Capital Cost Estimate Schedule, Line 47	[REDACTED]										
10	Expected Replacement % ⁽¹⁾			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
11	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate		1.02	1.04	1.06	1.08	1.10	1.13	1.15	1.17	1.20	1.22
12	Annual Maintenance Cost	Line 9 x Line 10 x Line 11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
13													
14	Total Annual Maintenance Capital	Line 5 + Line 12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Notes

Unitil Energy Systems d/b/a Unitil
 Schedule 12
 Maintenance Capital Costs

Line No.	Description	Reference	(v) Year 21	(w) Year 22	(x) Year 23	(y) Year 24	(z) Year 25
1	PV Modules & Associated Materials						
2	Original Cost	Capital Cost Estimate Schedule, Line 46	\$ [REDACTED]				
3	Expected Replacement % ⁽¹⁾		0.0%	0.0%	0.0%	0.0%	0.0%
4	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate	1.52	1.55	1.58	1.61	1.64
5	Annual Maintenance Cost	Line 2 x Line 3 x Line 4	\$ -	\$ -	\$ -	\$ -	\$ -
6							
7							
8	Racking Equipment & Associated Materials						
9	Original Cost	Capital Cost Estimate Schedule, Line 47	\$ [REDACTED]				
10	Expected Replacement % ⁽¹⁾		0.0%	0.0%	0.0%	0.0%	0.0%
11	Time Value Factor ⁽²⁾	Future Value of \$1 at annual escalation rate	1.52	1.55	1.58	1.61	1.64
12	Annual Maintenance Cost	Line 9 x Line 10 x Line 11	\$ -	\$ -	\$ -	\$ -	\$ -
13							
14	Total Annual Maintenance Capital	Line 5 + Line 12	\$ -	\$ -	\$ -	\$ -	\$ -

Notes

Unitil Energy Systems d/b/a Unitil
Schedule 13
Cost of Capital

Line No.	Description	Reference	(a)	(b)	(c) = (a) x (b)	(e)	(f) = (c) x (e)	(g)	(h) = (a) x (g)
			Capital Structure	Cost of Capital	Weighted Cost of Capital	Tax Factor	Weighted Cost of Capital	Adjusted Capital Structure ⁽¹⁾	Weighted Cost of Capital
1	<u>Cost of Capital Calculation</u>								
2	Common Stock Equity	DE 21-030	52.00%	9.20%	4.78%	1.3685	6.55%	9.20%	4.78%
3									
4	Preferred Stock Equity	DE 21-030	0.00%	6.00%	0.00%	1.0000	0.00%	6.00%	0.00%
5									
6	Long Term Debt	DE 21-030	48.00%	5.49%	2.64%	1.0000	2.64%	4.01%	1.93%
7									
8	Total	Line 2 + Line 4 + Line 6	100.00%		7.42%		9.18%		6.71%
9									
10			(a)						
11	<u>Tax Rate Calculation</u>		Rate						
12	State - NH ⁽²⁾		7.50%						
13									
14	Federal		21.00%						
15									
16	Federal Benefit of State Income Tax	-(Line 12 x Line 14)	-1.58%						
17									
18	Effective Tax Rate	Line 12 + Line 14 + Line 16	26.93%						
19									
20	Gross-Up Factor	(1 ÷ (1 - Line 18))	1.3685						

Notes

(1) Tax Effected Cost of Long-Term Debt

(2) N.H. Business Profit Tax rate on or after 12/31/2023

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 2

Received: 2/23/23
Request No. DOE 2-3

Date of Response: 2/27/23
Witness: Jacob Dusling

Request:

Please provide a copy of each proposal received for this project, as well as the Company's evaluations of the proposal.

Response:

ReVision Energy's response to the Final EPC RFP was included in Exhibits SP-3¹ and SP-4 to the Supplemental Testimony filed on February 20, 2023.² Bidder #2's response to the Final EPC RFP is provided as DOE 2-3 Attachment 1(a) and Attachment 1(b). Bidder #3's response to the Final EPC RFP is provided as DOE 2-3 Attachment 2(a) through DOE 2-3 Attachment 2(r).

The Company's scoring/evaluation sheets of the responses to the Final EPC RFP are provided as DOE 2-3 Attachment 3.

The Company's Benefit-Cost Analysis of ReVision's response to the Final EPC RFP was included as Exhibit SP-7 as part of the Supplemental Testimony filed on February 20, 2023. The Company's Benefit-Cost Analysis of Bidder #2's response to the Final EPC RFP is provided as DOE 2-3 Attachment 4. The Company's Benefit-Cost Analysis of Bidder #3's response to the Final EPC RFP is provided as DOE 2-3 Attachment 5.

The Company is providing the following attachments on only a Confidential basis, because they contain competitively sensitive and proprietary information and are confidential in their entirety: DOE 2-3 Attachment 1(a); and DOE 2-3 Attachment 2(a) through DOE 2-3 Attachment 2(q).

The Company is providing the following attachments on a Confidential and Redacted basis: DOE 2-3 Attachment 1(b); DOE 2-3 Attachment 2(r); DOE 2-3 Attachment 3; DOE 2-3 Attachment 4; DOE 2-3 Attachment 4; and DOE 2-3 Attachment 5.

The Company has a good faith basis for seeking confidential treatment of these Attachments pursuant to Puc 208.08(d), and intends to submit a motion for confidential treatment regarding the Attachment at or before the commencement of the hearing in Docket DE 22-073.

¹ Exhibit SP-3(CONFIDENTIAL) was filed in only confidential form. The Company's filing was accompanied by a Motion for Confidential Treatment and Protective Order setting forth the reasons Exhibit SP-3 should be protected as confidential, in its entirety.

² Because February 20, 2023 was a federal holiday, the Commission docketed the Supplement Testimony and Exhibits as being filed on February 21, 2023.



KINGSTON SOLAR PROJECT
2 MILL ROAD / 24 TOWLE ROAD, KINGSTON, NH

February 24, 2023

Discussion Items

Walk through of supplemental testimony

1. Status of the RFP Process
2. Facility Life and Performance Characteristics
3. Initial Capital Cost Comparison
4. Maintenance and Decommissioning Costs
5. Other Benefit-Cost Analysis Changes
6. Federal Tax Credits – Production Tax Credit
7. Updated Benefit-Cost Analysis Results
8. Risk Analysis

Status of the EPC RFP Process

Kingston Solar Project

- Issued September 12, 2022
 - RFP provided that it would be used to obtain detailed pricing information for various facility options that will be utilized by Unitil in regulatory filings and for the development of a “Final” RFP for the project.
 - Bids received October 11, 2022
 - The assumptions and inputs in the Benefit-Cost Analysis in the initial filing (filed October 31, 2022) are based on the proposal identified as the best overall value in this stage of the solicitation
-
- Issued November 30, 2022
 - Bids received January 20, 2023
 - Selected ReVision as EPC contractor, subject to negotiating and executing a final contract
 - Updated assumptions and inputs to Benefit-Cost Analysis based on ReVision proposal



Facility Life and Energy Production

Kingston Solar Project

	Preliminary EPC RFP	Final EPC RFP
Expected Facility Life	30 years	40 years
System Capacity	4.99 MW (AC) / 6.15 MW (DC)	4.88 MW (AC) / 6.50 MW (DC)
AC Capacity Factor (year 1)	22.0%	22.8%
Energy Production (Year 1)	9,608,811 kWh	9,729,412 kWh
Energy Production at Peak Hour (year 1)	1,850 kWh	2,379 kWh
Average Energy Production at Monthly Peak Hour (year 1)	600 kWh	820 kWh
Degradation Rate of Modules	0.5% Annually	2% Year 1 / 0.5% Annually Thereafter

	Preliminary EPC RFP	Final EPC RFP	
	Warranty Period (Years)	Warranty Period (Years)	Commercial Lifespan (Years)
PV Modules	25	25	40
Inverters	5 (ext. avail.)	20	20
Racking Equipment	10-20	20	40



Initial Installation Capital Cost Comparison

Kingston Solar Project

Initial Capital Cost Element	Estimated Cost (Preliminary EPC RFP)	Estimated Cost (Final EPC RFP)
PV Installation	[REDACTED]	[REDACTED]
Electric System Upgrades	\$600,000	\$560,000
Land Improvements	[REDACTED]	[REDACTED]
Land Acquisition	\$857,938	\$820,438
TOTAL	[REDACTED]	[REDACTED]

- PV Installation Costs increased by approximately 5%, which is mostly driven by changes to the design.
 - Changes are expected to enhance overall reliability, production and performance of the PV facility.
 - Comparison of \$/DCW for Facility throughout Unitil's RFP Process.

Preliminary EPC RFP (10/22) - Tracking	Final EPC RFP (1/23) - Tracking
[REDACTED]	[REDACTED]



Capital Replacement and O&M Cost Comparison

Kingston Solar Project

- Updated Inverter Replacement from [REDACTED] in year 15 to [REDACTED] in year 20.
- PV Modules – Annual cost of [REDACTED] beginning in year 26, increasing to [REDACTED] in Year 40.
 - Assumes 0.5% replacement per year from year 1 to 10 (Years 26 to 35) after the expiration of warranty and 1.0% replacement per year thereafter (Years 36-40).
- Racking Equipment– Annual cost of [REDACTED] beginning in year 21, increasing to [REDACTED] in Year 40.
 - Assumes 0.5% replacement per year from year 1 to 10 (Years 21 to 30) after the expiration of warranty and 1.0% replacement per year thereafter (Years 31-40).
- Added a future decommission cost of [REDACTED], which is spread evenly [REDACTED] per year) over the Project's estimated life

- Maintenance Contract updated
 - Preliminary EPC RFP included [REDACTED] in year 1 with a 2.5% annual escalation
 - Final EPC RFP included to [REDACTED] in year 6 with a 2% annual escalation
 - First five years are included in the capital cost to install the facility
- Added [REDACTED] per year a 2% annual escalation for vegetation management.



Benefit-Cost Analysis Modeling Changes

Highlighting additional modeling changes not addressed in previous slides

Benefit-Cost Analysis – Newly Added Schedules

- Schedule 4 - Production Tax Credit
 - Replaced ITC Schedules
- Schedule 6 – Decommissioning Expense
- Schedule 11 – Tax Depreciation (Maintenance Capital)
- Schedule 13 – Maintenance Capital Costs

Table 8: Updates to Regional Transmission Rates

Rate	Initial Benefit-Cost Analysis	Supplemental Benefit-Cost Analysis
ISO-NE Section 4A, Schedule 1 Rate (\$ kW-Mo.)	\$0.1918	\$0.2048
ISO-NE Section 4A, Schedule 5 Rate (\$ kW-Mo.)	\$0.0074	\$0.0070
ISO-NE Section 2, Schedule 1 Rate (\$ kW-Mo.)	\$0.1459	\$0.1459
ISO-NE Section 2, Schedule 9 Rate (\$ kW-Mo.)	\$11.7453	\$11.7453

← Updated for latest
Regional
Transmission Rates

Exhibit SP-1, Table 8

Production Tax Credit versus Investment Tax Credit

The PTC provides customer added time value of money benefits

Production Tax Credit

- Annual federal tax credits for the first 10 years of operation
- Credit is a function of annual production multiplied by the PTC rate
- Not subject to IRS Normalization Rules
- The 2022 PTC rate is 2.75 cents per kWh and is adjusted each year for inflation
- Domestic Content bonus increases the PTC rate 10%

Investment Tax Credit

- One-time federal tax credit
- Credit is a function of eligible investment multiplied by the ITC rate
- Subject to IRS Normalization Rules
- ITC rate of 30% (assuming Prevailing Wage and Apprenticeship standards met)
- Domestic Content bonus increases the ITC rate 10%

The PTC provides customers with greater time value of money benefits relative to the ITC as a result of IRS Normalization Rules

Benefit-Cost Analysis Results Roll Forward

Updated Benefit-Cost Analysis has stronger NPV and BCR

Table 9: Respective Contributions to Benefit-Cost Ratio and NPV

	NPV ¹⁶	BCR ¹⁷	Description
	\$1.4	1.09	
Federal Tax Credit	\$1.1	0.08	Switch from ITC to PTC
Peak Output	\$1.0	0.06	Higher Peak Output based on RFP response
Longer Facility Life	\$0.8	0.05	Expected life of 40 years relative to 30 years in initial filing
Annual Production	\$0.7	0.04	Higher capacity factor based on RFP response
Higher Year Two Degradation	(\$0.3)	-0.02	2% degradation in year 2 relative to 0.5% in initial filing
Higher Capital Costs	(\$0.9)	-0.06	Higher initial capital costs and included Maintenance Capital Costs
Lower Energy Futures Prices	(\$1.0)	-0.06	Updated Energy Futures since initial filing
Other	(\$0.3)	-0.03	Higher O&M, added Decommissioning Expense, and updated regional transmission rates
Updated Benefit-Cost Analysis	\$2.5	1.15	

Exhibit SP-1, Table 9

Risk Analysis Simulation

Conducted Monte Carlo analysis on Benefit-Cost Analysis with 100,000 iterations

Key Inputs

- Annual Capacity Factor
- Capacity at Annual and Monthly Peak
- Depreciable Capital Costs
- REC Prices
- ISO NE Futures
- Escalation Rate – Direct Benefit
- Escalation Rate – Excluding Direct Benefits
- PTC Rate – Domestic Content Bonus

84.3% probability the Project delivers a positive NPV and a Benefit-Cost Ratio of 1.0 or greater

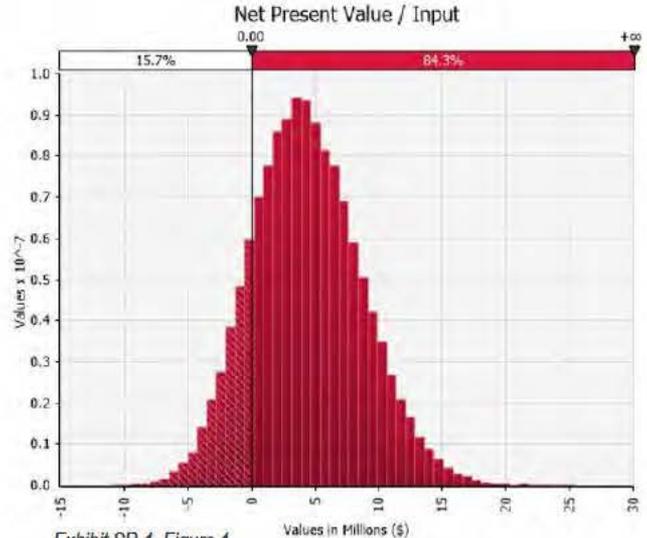


Exhibit SP-1, Figure 1

Results are "normally distributed"

Risk Analysis Simulation Results

Additional results of the simulation analysis

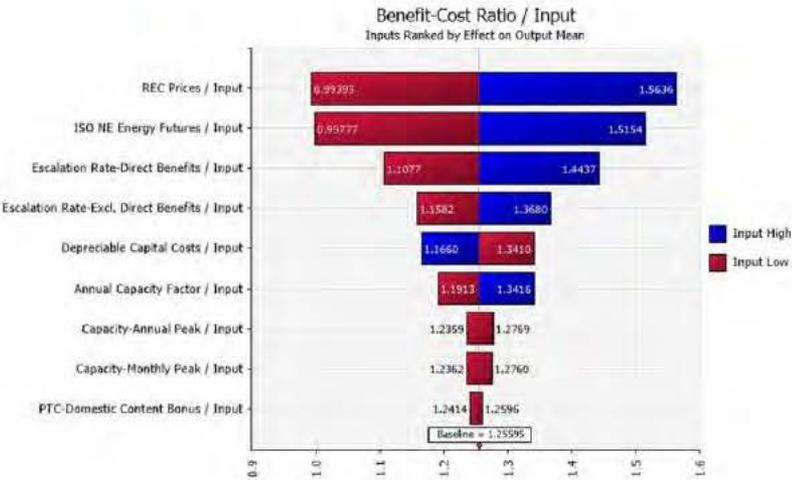


Exhibit SP-1, Figure 3

The tornado graph ranks the variability of each input and displays the largest impact each assumption had on the results

Percentile	Net Present Value	Benefit-Cost Ratio
1.0%	(4,807,353)	0.72
2.5%	(3,526,266)	0.80
5.0%	(2,401,678)	0.86
10.0%	(1,045,952)	0.94
20.0%	641,349	1.04
25.0%	1,316,598	1.08
30.0%	1,934,745	1.11
35.0%	2,503,388	1.15
40.0%	3,070,847	1.18
45.0%	3,607,570	1.21
50.0%	4,132,047	1.24
55.0%	4,671,899	1.27
60.0%	5,232,628	1.31
65.0%	5,838,370	1.34
70.0%	6,457,532	1.38
75.0%	7,124,508	1.42
80.0%	7,879,678	1.47
90.0%	9,933,677	1.59
95.0%	11,645,432	1.69
97.5%	13,149,104	1.79
99.0%	14,850,923	1.90

Exhibit SP-1, Table 12

Conclusion

Kingston Solar Project

- Selected ReVision as the winning bidder (subject to final EPC agreement)
- Cost and operating inputs based on winning bidder's RFP response
- Updated market data and rates where applicable
- Revised approach for federal tax credits (PTC vs ITC)
- Additional costs (O&M, Capital Replacement, Decommissioning)

- Qualitative assessments address risk identification, management, mitigation
- Quantitative assessments including stress tests, simulation analyses

- Customer benefits increased with updated and supplemental data
- Based on stress tests and simulations, the Project is highly likely to provide positive net benefits for customers
- Net benefits increase when we consider indirect benefits and possible future benefits of energy storage



Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 2

Received: 2/23/23
Request No. DOE 2-4

Date of Response: 2/27/23
Witness: Andre Francoeur

Request:

Please provide a copy of the PowerPoint presentation given in Wednesday's technical session, with annotations to the table on Slide 9 (Respective Contributions to Benefit-Cost Ratio and NPV) explaining which proposal is used for the various mathematical assumptions.

Response:

Please see DOE 2-4 for a copy of the PowerPoint presentation given at the February 22, 2023 technical session.

The Company is providing DOE 2-4 Attachment 1 on a Confidential and a Redacted basis. The Company has a good faith basis for seeking confidential treatment of the Attachments pursuant to Puc 208.08(d), and intends to submit a motion for confidential treatment regarding the Attachment at or before the commencement of the hearing in Docket DE 22-073.

The Table on Slide 9 (also appearing as Table 9 in Exhibit SP-1), was presented to illustrate the relative impacts to the Project's BCR and NPV produced by changes to certain inputs and assumptions in the Benefit-Cost Analysis. A description of the calculation in each row of the Table on Slide 9 is provided below:

- The Federal Tax Credit change of \$1.1 million was calculated by comparing the present value of the initially filed Investment Tax Credit ("ITC") flow back, including tax gross up and ITC tax effect, to the Production Tax Credit flow back in the updated Benefit-Cost Analysis model (Exhibit SP-7).
- The roll forward figures for peak output, annual production, higher year-two degradation, and lower energy futures were all calculated by inputting the initially filed assumptions in the updated Benefit-Cost model (Exhibit SP-7) and observing the change in results.
- The longer facility life calculation was calculated by taking the NPV of years 31-40 in the updated Benefit-Cost model (Exhibit SP-7).
- The higher capital costs and added maintenance capital was calculated by inputting the initially filed capital cost estimates (and removing maintenance capital) into the updated Benefit-Cost model (Exhibit SP-7) and comparing the

Unitil Energy Systems, Inc.
Docket No. DE 22-073
Petition for Approval of Investment in and Recovery of Distributed Energy Resource
Pursuant to RSA 374-G
Department of Energy Data Requests Set 2

Received: 2/23/23
Request No. DOE 2-4

Date of Response: 2/27/23
Witness: Andre Francoeur

- NPV change over the first 30 years. The Company did not include year 31-40 in this calculation because it was indirectly included in the NPV calculation for the longer facility life.
- The Other category represent the balance of the variance that had relatively smaller impacts on the results.