

**BEFORE THE STATE OF NEW JERSEY**

**BOARD OF PUBLIC UTILITIES**

IN THE MATTER OF THE PETITION OF ) BPU Docket No. E012080721  
PUBLIC SERVICE ELECTRIC AND GAS )  
COMPANY FOR APPROVAL OF AN )  
EXTENSION OF A SOLAR GENERATION )  
INVESTMENT PROGRAM )  
AND ASSOCIATED COST RECOVERY )  
MECHANISM AND FOR CHANGES IN THE )  
TARIFF FOR ELECTRIC SERVICE, )  
B.P.I.N.J. No. 15 ELECTRIC PURSUANT )  
TO N.J.S.A. 48:2-21, 48:2-21.1 AND N.J.S.A )  
48:3-98.1 ("Solar4 All Extension Petition") )

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**DIRECT TESTIMONY OF ANDREA C. CRANE  
ON BEHALF OF THE  
STATE OF NEW JERSEY  
DIVISION OF RATE COUNSEL**

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TABLE OF CONTENTS

	Page
I. Statement of Qualifications	1
II. Purpose of Testimony	2
III. Summary of Conclusions	3
IV. Discussion of the Issues	4
A. Introduction	4
B. Need for the Program Has Not Been Demonstrated	11
C. PSE&G Can Undertake Solar Projects On An Unregulated Basis	12
D. PSE&G's Currently Authorized Equity Return Is Excessive	15
E. Administrative Cost Recovery	21
F. Difficulty in Tracking and Verifying Costs	23
G. Summary	25

Appendix A - List of Prior Testimonies

Appendix B- Referenced Data Requests

**I. STATEMENT OF QUALIFICATIONS**

**Q. Please state your name and business address.**

A. My name is Andrea C. Crane and my business address is 90 Grove Street, Suite 211, Ridgefield, Connecticut 06877. (Mailing address: PO Box 810, Georgetown, Connecticut 06829)

**Q. By whom are you employed and in what capacity?**

A. I am President of The Columbia Group, Inc., a financial consulting firm that specializes in utility regulation. In this capacity, I analyze rate filings, prepare expert testimony, and undertake various studies relating to utility rates and regulatory policy. I have held several positions of increasing responsibility since I joined The Columbia Group, Inc. in January 1989. I became President of the firm in 2008.

**Q. Please summarize your professional experience in the utility industry.**

A. Prior to my association with The Columbia Group, Inc., I held the position of Economic Policy and Analysis Staff Manager for GTE Service Corporation, from December 1987 to January 1989. From June 1982 to September 1987, I was employed by various Bell Atlantic (now Verizon) subsidiaries. While at Bell Atlantic, I held assignments in the Product Management, Treasury, and Regulatory Departments.

**Q. Have you previously testified in regulatory proceedings?**

A. Yes, since joining The Columbia Group, Inc., I have testified in over 350 regulatory proceedings in the states of Arizona, Arkansas, Connecticut, Delaware, Hawaii, Kansas,

1 Kentucky, Maryland, New Jersey, New Mexico, New York, Oklahoma, Pennsylvania,  
2 Rhode Island, South Carolina, Vermont, Washington, West Virginia and the District of  
3 Columbia. These proceedings involved electric, gas, water, wastewater, telephone, solid  
4 waste, cable television, and navigation utilities. A list of dockets in which I have filed  
5 testimony since January 2008 is included in Appendix A.  
6

7 **Q. What is your educational background?**

8 A. I received a Master of Business Administration degree, with a concentration in Finance,  
9 from Temple University in Philadelphia, Pennsylvania. My undergraduate degree is a  
10 B.A. in Chemistry from Temple University.  
11

12 **II. PURPOSE OF TESTIMONY**

13 **Q. What is the purpose of your testimony?**

14 A. On August 1, 2012, Public Service Electric and Gas Company ("PSE&G" or  
15 "Company") filed a Petition with the New Jersey Board of Public Utilities ("BPU" or  
16 "Board") requesting approval to extend the Solar Generation Investment Program called  
17 Solar 4 All™ ("Extension Program"). By letter dated August 31, 2012 the Board's Staff  
18 notified PSE&G that the filing was not administratively complete. A supplemental filing  
19 submitted on September 12, 2012 was deemed administratively complete.

20 PSE&G received BPU approval for the original Solar 4 All™ program ("Original  
21 Program") on August 3, 2009 in Docket No. EO09020125. The Original Program  
22 consisted of an investment of \$514.6 million and installation of 80 MW of solar  
23 generation systems by the end of 2013.

1           The Columbia Group, Inc. was engaged by The State of New Jersey, Division of  
2           Rate Counsel ("Rate Counsel") to review PSE&G's filing and to provide  
3           recommendations to the BPU with regard to the issue of cost recovery and other financial  
4           issues. David Dismukes, of Acadian Consulting Group is also filing testimony on behalf  
5           of Rate Counsel with regard to economic, regulatory and renewable energy policy issues.  
6

7   **III. SUMMARY OF CONCLUSIONS**

8   **Q.   Please summarize your conclusions and recommendations.**

9   **A.**   Based on my analysis of the Company's filing and other documentation in this case, my  
10       conclusions are as follows:

- 11       1.    The BPU should deny the Company's request to extend the Solar 4 All™  
12           Program.
- 13       2.    As addressed in detail by Mr. Dismukes, the Extension Program is not necessary  
14           to the development of the solar energy market in New Jersey.
- 15       3.    PSE&G's parent, Public Service Enterprise Group ("PSEG") could undertake the  
16           investment proposed under the Extension Program through one of its unregulated  
17           affiliates, thus properly allocating the associated risks to shareholders.
- 18       4.    The cost of the proposed Extension Program is excessive, especially the proposal  
19           that PSE&G be permitted to earn a pre-tax return of 11.852% on its investment in  
20           the Extension Program, resulting in a return requirement of \$587.7 million and a  
21           windfall for shareholders.
- 22       5.    In addition to excessive return requirements, the Extension Program would also  
23           require ratepayers to fund an estimated \$512.5 million in operating and

1 maintenance costs, administrative costs, rental expense, insurance, and other  
2 costs.

3 6. The Extension Program is inconsistent with the BPU's directive in the May 23,  
4 2012 Order in BPU Docket No. EO11050311V, whereby the BPU indicated that  
5 administrative costs of Electric Distribution Company ("EDC") Solar Renewable  
6 Energy Certificate ("SREC") programs should not be paid by ratepayers, but  
7 instead should be paid by solar developers and generators.

8 7. The integrated nature of the Company's business and its associated accounting  
9 system make it difficult to verify and audit costs claimed for recovery through  
10 surcharge mechanisms.

11  
12 **IV. DISCUSSION OF THE ISSUES**

13 **A. Introduction**

14 **Q. Please provide a brief summary of the Solar 4 All™ Extension Program proposed**  
15 **by PSE&G.**

16 **A.** PSE&G proposes to finance, own, install and operate a minimum of 136 MW of solar  
17 capacity over five years at an initial plant capital cost of \$690 million. The Company  
18 estimates that an additional \$39.4 million will be spent to operate and maintain the  
19 facilities during the first five years of the Extension Program. Thus, PSE&G is proposing  
20 a five-year funding request of \$729.4 million.

21 The four distinct segments included in the Extension Program and the associated  
22 plant costs of solar installations include:

- 1       • Segment A - 90 MW allocated to landfills & brownfields, with a capital investment of
- 2       \$474 million;
- 3       • Segment B - 20 MW allocated to warehouse roofs, with a capital investment of \$74
- 4       million;
- 5       • Segment C - 25 MW allocated to parking structures, with a capital investment of \$133
- 6       million; and
- 7       • Segment D - 1 MW allocated to pilots/demo projects, with a capital investment of \$9
- 8       million.

9           The largest program segment, Segment A, is allocated to installations located on  
10       landfills and brownfields. These sites include inactive sanitary landfill facilities, and  
11       vacant or underutilized commercial or industrial sites that are contaminated, or were  
12       filled with contaminants (“brownfields”), and sites owned by governmental entities such  
13       as the unused lands surrounding prisons. The Company states that these non-productive  
14       sites have not typically been targeted for solar development in the past due to a variety of  
15       prohibitive factors that PSE&G believes it is able to overcome.

16          Segment B would involve six to ten projects, totaling 20 MW of generation, to be  
17       installed on warehouse roofs. This segment is intended for buildings with roofs of at  
18       least 50,000 square feet, the minimum threshold for a 500 kW system. PSE&G witness,  
19       Mr. Joseph A. Forline, states on page 20 of his testimony that New Jersey has close to  
20       500 million square feet of “empty” leased warehouse roof space, much of which is in  
21       PSE&G service territory, and that converting all of that space into useful solar systems  
22       would provide over 2,000 MW of capacity.

1           Solar installations in Segment C, the Parking segment, would be installed on  
2           canopies above the car parking spaces or atop other structures in parking lots and garages  
3           with 350 or more spaces. The Company noted in its Petition that it would consider  
4           projects that can provide additional revenue, such as advertising revenue, which could be  
5           used to offset some of the costs of the Extension Program. The 25 MW allocation would  
6           be divided between 5 to 15 projects.

7           Pilots and demonstrations make up the smallest segment, Segment D, at 1 MW  
8           and carry a plant cost of \$9 million. According to the filing, “[t]he primary focus will be  
9           on integrating solar power with energy storage, but other proposals that attempt to lower  
10          the overall cost of solar power, more fully integrate solar into the distribution grid, or  
11          otherwise show dual benefits will be considered.”<sup>1</sup> The 1 MW will be allocated across 5-  
12          10 demonstration projects of 100 to 200 kW each.

13  
14   **Q.    What are the total estimated costs of the program?**

15   A.    It should be noted that the Petition’s Executive Summary only details the first 5 years of  
16          the Extension Program costs of \$729 million, including an estimated \$690 million in  
17          fixed plant capital costs and an estimated \$39.4 million in Operation and Maintenance  
18          (“O&M”) costs over that period. A more complete estimate appears in the testimony of  
19          PSE&G witness Mr. Steven Swetz. Mr. Swetz details a total of \$1.864 billion of  
20          Extension Program costs through 2037, including \$764 million of fixed plant investment  
21          (including replacements) and \$512 million for administrative, rent, insurance, and other

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<sup>1</sup> Page 23 of the Direct Testimony of Joseph A. Forline

1 expenses<sup>2</sup>. The balance of \$587.7 million, or nearly 31.5% of the total Program costs,  
2 will be paid to PSE&G as return on the Solar 4 All™ Extension Program.<sup>3</sup>

3 Company employees will be utilized throughout the Program. As stated on page  
4 14 of Mr. Forline's testimony: "Certain parts of construction and operation may be  
5 performed by PSE&G, and the costs incurred shall be considered incremental to the level  
6 in base rates for purposes of cost recovery." Furthermore, "PSE&G plans to use its own  
7 workforce for interconnection work."

8  
9 **Q. How does the Company propose to recover the costs of the Solar 4 All™ Extension**  
10 **Program?**

11 **A.** The proposed cost recovery mechanism is described in the testimony of PSE&G witness  
12 Stephen Swetz and his proposed revenue requirement calculation is shown in Schedule  
13 SS-S4AE-3. PSE&G proposes to determine a monthly revenue requirement, based on the  
14 following formula:

15  
16 
$$\text{Revenue Requirement} = (\text{Pre-Tax Cost of Capital} * \text{Net Investment}) +$$
  
17 
$$\text{Amortization and/or Depreciation} + \text{Operation and Maintenance Costs} -$$
  
18 
$$\text{Revenues from Solar Output} - \text{ITC Amortization w/ Tax Gross Up} + \text{Tax}$$
  
19 
$$\text{Associated from ITC Basis Reduction}$$
  
20

21 PSE&G proposes to recover the Extension Program costs through a Solar  
22 Generation Investment Extension Program Component ("SGIEPC") of the Regional

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2 Schedule SS-S4AE-3, page 2.

3 Schedule SS-S4AE-3, page 1, Col. 11

Greenhouse Gas Initiative Recovery Charge ("RRC"), and requests authorization to earn a return on its net investment in the Extension Program based on its BPU-approved weighted average cost of capital ("WACC"). The Company would recover a return of and return on its program investments over an estimated useful life of 20 years.

Energy and capacity generated from the Extension Program will be sold in the PJM markets. In addition, the installed Solar 4 All™ systems will generate solar renewable energy certificates ("SRECs"), which PSE&G plans to sell in periodic SREC auctions, and auction revenues will be credited to the revenue requirement. PSE&G estimates that the sale of energy, capacity, and SRECs will generate \$755.6 million.<sup>4</sup> The Company assumed an SREC market value of \$200 in its analysis.

**Q. What impact would the proposed program have on customer rates?**

A. PSE&G is requesting that the BPU approve initial rates that are sufficient to recover \$6.2 million on an annual basis, based on the projected revenue requirement from January 1, 2013 through September 30, 2014.<sup>5</sup> The revenue requirement increases to a maximum of \$68.77 million by 2017.<sup>6</sup> In year one of the Extension Program, the SGIEPC portion of the electric RRC would be \$0.000087 per kWh (including SUT). The average residential electric customer using 780 kWh in each summer month and 7,360 kWh annually would experience an increase in their annual bill from \$1,336.60 to \$1,337.28, an increase of \$0.68, or approximately 0.05%. The maximum projected revenue requirement, which would occur in 2017, would increase the average residential customer's annual electric bill by \$12.20, or by approximately 0.913%. The total revenue requirement projected to

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<sup>4</sup> Schedule SS-S4AE-3, page 2, Columns 17-20.

<sup>5</sup> Schedule SS-S4AE-4.

<sup>6</sup> Schedule SS-S4AE-3, page 2, Column 24.

be recovered through electric rates through 2037 is \$907 million<sup>7</sup>. It should be noted that these estimates are based on a market price of \$200 per SREC. If market prices fall below \$200 per SREC, or if the Company generates fewer SRECs than projected, or if the Company does not obtain its projected capacity or energy revenues, or if the Company incurs operating costs that are higher than projected, then the overall costs to ratepayers would be higher.

**Q. What cost of capital is the Company proposing to utilize for the return on its investment balance?**

A. PSE&G is proposing to utilize a WACC of 8.21%, as shown in Schedule SS-S4AE-2 of Mr. Swetz's testimony. In addition, the equity portion would be grossed-up for taxes, resulting in a pre-tax cost of capital of 11.852%. This cost of capital is based on the following capital structure and cost rates:

**Table 1**

	Percent	Cost	WACC	Revenue Conversion Factor	WACC Including Tax Effects
Long Term Debt	48.80%	6.0172%	2.9364%		2.9364%
Common Equity	51.20%	10.3000%	5.2736%	1.6906	8.9156%
Total	100.00%		8.2100%		11.8520%

**Q. Does the Company also propose to charge ratepayers interest on monthly over/under recoveries?**

<sup>7</sup> Schedule SS-S4AE-3, page 2, Column 24.

1 A. Yes, PSE&G's filing includes interest on monthly over/under recoveries based upon the  
2 Company's interest rate for commercial paper and/or bank credit lines utilized in the  
3 preceding month. If both commercial paper and bank credit lines have been utilized, the  
4 weighted average of both sources of capital would be used.

5  
6 **Q. Do you support the Extension Program as proposed by PSE&G?**

7 A. No, I do not. I believe that the proposed Extension Program should be rejected by the  
8 BPU, for several reasons. First, the proposed program is not necessary to promote the  
9 development of a solar energy market in the State of New Jersey. Second, PSEG could  
10 undertake and finance solar generation programs on a unregulated basis, if it should so  
11 desire. Third, the Extension Program is far too costly for ratepayers and would result in  
12 excessive returns for PSE&G shareholders. Fourth, the Extension Program would require  
13 ratepayers to pay significant administrative costs that they would not be subject to under  
14 other SREC financing programs. Fifth, it is difficult to separately identify, track and  
15 verify the operating costs of the Extension Program, and to ensure that all costs claimed  
16 for recovery are incremental to costs that are being recovered in base rates. For all these  
17 reasons, I recommend that the BPU reject the Company's proposal, as discussed in  
18 further detail below.

**B. Need for the Program Has Not Been Demonstrated**

**Q. Do you believe that the Solar 4 All™ Extension Program is necessary to promote the solar energy market in New Jersey?**

A. No, I do not. As discussed more fully in Mr. Dismukes's testimony, there is no evidence that the Extension Program is needed in order to meet the State's renewable energy goals. The utilities in the state, including PSE&G, have already implemented programs that have jump-started the expansion of renewable energy, including solar energy programs, in New Jersey. In fact, at least partially as a result of these programs, the SREC market price has fallen dramatically, with market prices of SRECs falling from \$688.52 in August 2009 to \$135.68 in July 2012.<sup>8</sup> This decline has resulted in a recommendation that the auction of SRECs generated from new SREC financing programs be delayed until Energy Year ("EY") 2016 in the expectation that this delay will result in higher SREC prices, thereby reducing the costs of these programs that must be borne by ratepayers. PSE&G has successfully implemented two SREC financing programs (Solar Loan I and Solar Loan II) and it is currently requesting BPU approval to implement a third such program (Solar Loan III).<sup>9</sup> It also implemented an initial Solar 4 All™<sup>10</sup> program that is due to be completed in 2013. Thus, a great deal of activity has sparked the market and there is no evidence that PSE&G's ownership of additional solar generation is necessary in order to provide further development at this time. In fact, the ready availability of ratepayer funds could actually serve as a detriment to the

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<sup>8</sup> Response to RCR-P-3(a), IM/O the Petition of Public Service Electric and Gas Company for Approval of a Solar Loan III Program and an Associated Cost Recovery Mechanism and for Changes in the Tariff for Electric Service, B.P.U.N.J. No. 15 Electric Pursuant to N.J.S.A. 48:2-21 and N.J.S.A. 48:2-21.1, BPU Docket No. EO12080726.

<sup>9</sup> See PSE&G's Petition in BPU Docket No. EO12080726.

<sup>10</sup> IM/O Petition of Public Service Electric and Gas Company for Approval of a Solar Generation Investment Program and Associated Cost Recovery Mechanism, BPU Docket No. EO09020125 (August 3, 2009).

1 development of more efficient technologies and programs. The Extension Program  
2 eliminates all shareholder risk and therefore it provides no incentive to the Company to  
3 develop new solar technologies that may improve the solar energy market or produce  
4 solar energy at lower cost. Given the success of solar energy programs that have been  
5 implemented in New Jersey over the past few years, there is no evidence that further  
6 ratepayer support of PSE&G-owned solar generation is necessary in order to promote  
7 renewable energy in the state or to meet the current goals of the state's Energy Master  
8 Plan.

9  
10 **C. PSEG Can Undertake Solar Projects On An Unregulated Basis**

11 **Q. Does PSEG have the ability to undertake solar generation projects on an**  
12 **unregulated basis?**

13 A. Yes, it does. If PSEG wants to undertake additional solar generation projects, it can  
14 certainly do so through one of its unregulated affiliates, with shareholders bearing the  
15 associated risks. There is nothing preventing PSEG from building and operating solar  
16 installations on an unregulated basis, and indeed it already does so through its affiliate  
17 PSEG Energy Holdings. The proposed Solar 4 All™ Extension Program would allow  
18 PSE&G to expand its presence in the renewable energy market without PSEG's  
19 shareholders assuming any risk. Rather, under the Company's proposal, all of the risk  
20 falls to the Company's ratepayers. This puts an unreasonable burden on ratepayers,  
21 especially when one considers that the program is not necessary at this time in order to  
22 meet the state's renewable energy goals. Therefore, if PSEG's management wants to

1 build, own, and operate additional solar generation facilities, they should do so on an  
2 unregulated basis and shareholders, not ratepayers, should assume the associated risk.

3  
4 **Q. How does the proposed Extension Program place all of the risk on PSE&G**  
5 **ratepayers?**

6 A. The proposed Extension Program places all of the risk on ratepayers by making  
7 ratepayers ultimately responsible for all costs associated with the program. Specifically,  
8 under the Company's proposal ratepayers would be responsible for providing  
9 shareholders with a guaranteed return on investment at an overall pre-tax cost of capital  
10 of 11.852%, which includes a 10.3% cost of equity. In addition, ratepayers would be  
11 responsible for all other costs associated with the solar generation facilities, including  
12 depreciation, operating and maintenance costs, rental expense, property taxes and  
13 insurance. PSE&G is also projecting that the solar generation facilities will require  
14 capital replacements of worn out inverters and communication equipment in the 2023-  
15 2027 timeframe and has included such replacement costs in its claim.<sup>11</sup> It has also  
16 included costs for retirement of the facilities at the end of a twenty-year lifespan.<sup>12</sup> The  
17 proposed Extension Program would put a significant financial obligation on New Jersey  
18 ratepayers through 2037, which is the last year included in the Company's revenue  
19 requirement analysis. Moreover, the actual magnitude of that obligation is unknown and  
20 is dependent on a variety of factors and market forces over the next 25 years.

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11 Response to RCR-A-7.

12 Response to RCR-A-10.

1 **Q. How much would the Solar 4 All™ Extension Program cost ratepayers?**

2 A. Based on the assumptions contained in the testimony of Mr. Swetz, ratepayers would be  
3 responsible for an estimated \$907 million over the life of this program, or approximately  
4 48.6% of the total costs. The remainder of the revenue requirement would be covered by  
5 sales of energy, capacity, and SRECs and by tax credits, as shown below:

6 **Table 2**

	Costs	Recovery
Fixed Plant Investment	\$763,972	
Variable Expenses (Including Administration)	\$512,455	
Return to Shareholders	\$587,721	
Paid by Ratepayers		\$907,268
Capacity, Energy, SREC Sales		\$755,639
ITC Amortization		\$149,586
50% ITC Tax Basis Reduction		\$51,653
Total Costs	\$1,864,148	\$1,864,148

7  
8 Furthermore, while the Company's assumptions estimate that ratepayers would be  
9 responsible for 48.6% of these costs, in fact ratepayers would be responsible for all costs  
10 that are not recovered from other sources even if those costs exceed the Company's  
11 current estimates. So, for example, if SREC prices were to fall below the \$200 per SREC  
12 assumed in the Company's analysis (which, as Mr. Dismukes testifies, is likely), or if  
13 capacity and energy prices were lower than those assumed by the Company, the impact  
14 on ratepayers could be significantly more than the \$907 million shown above. The point  
15 is that ratepayers are responsible for funding all costs not covered by capacity, energy, or  
16 SREC sales or by tax credits, while at the same time shareholders would be guaranteed to  
17 earn their authorized rate of return with no risk of under-recovery. This is particularly

1           troublesome given the fact that PSE&G's currently authorized pre-tax return is 11.852%  
2           and includes an excessive return on equity of 10.3%.

3  
4           **D.    PSE&G's Currently Authorized Equity Return Is Excessive**

5   **Q.    Why do you believe that the Company's currently authorized equity return of**  
6           **10.3% is excessive?**

7   A.    The currently authorized return on equity of 10.3% was the result of a complex  
8           settlement in a base rate case that reflected compromise by several parties on many  
9           different issues. Moreover, that case was filed in May 2009 and new rates were effective  
10          in July 2010. Since the Company's last base rate case,<sup>13</sup> market conditions have changed  
11          substantially, a fact not reflected in the Company's request to earn its currently authorized  
12          WACC on investment made in the Extension Program.

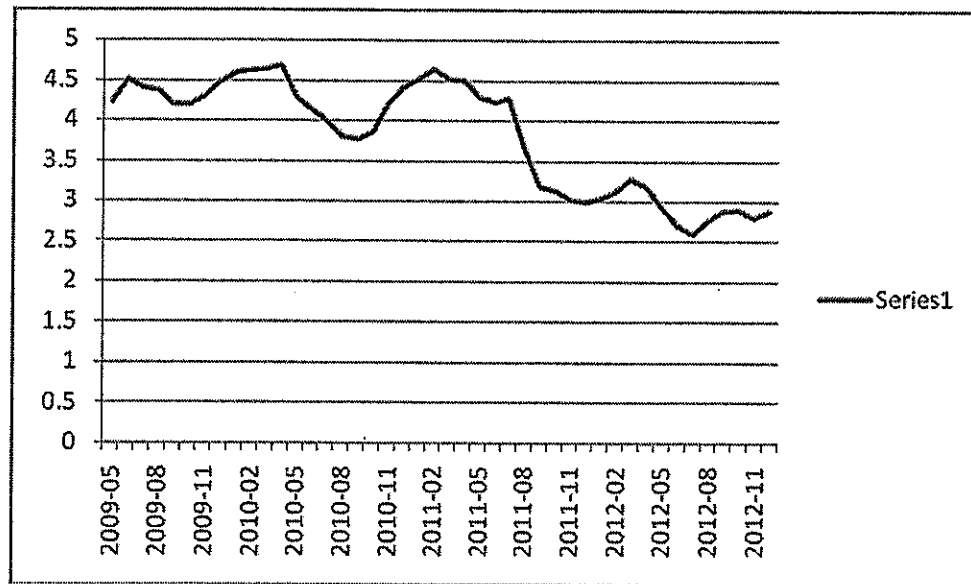
13  
14   **Q.    What has generally happened to capital costs since the BPU approved the settlement**  
15           **in BPU Docket No. GR09050422?**

16   A.    Capital costs declined between the time that the Company's last base rate case was filed  
17           and the issuance of an Order approving a return on equity of 10.3%. In addition, capital  
18           costs have continued to decline since that Order was issued in mid-2010. For example,  
19           30-year U.S. Government bonds fell from a rate of 4.23% in May 2009 to 3.99% in July  
20           2010, and continued to decline to a rate of 2.88% in December 2012, as shown below:<sup>14</sup>

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13 I/M/O the Petition of Public Service Electric and Gas Company for Approval of an Increase in Electric and Gas Rates and for Changes in the Tariffs for Electric and Gas Service B.P.U.N.J. No 14 Electric and B.P.U.N.J. No. 14 Gas Pursuant to N.J.S.A. 48:2-21 and N.J.S.A. 48:2-21.1 and for Approval of a Gas Weather Normalization Clause; a Pension Expense Tracker and for Other Appropriate Relief, BPU Docket No. GR09050422.

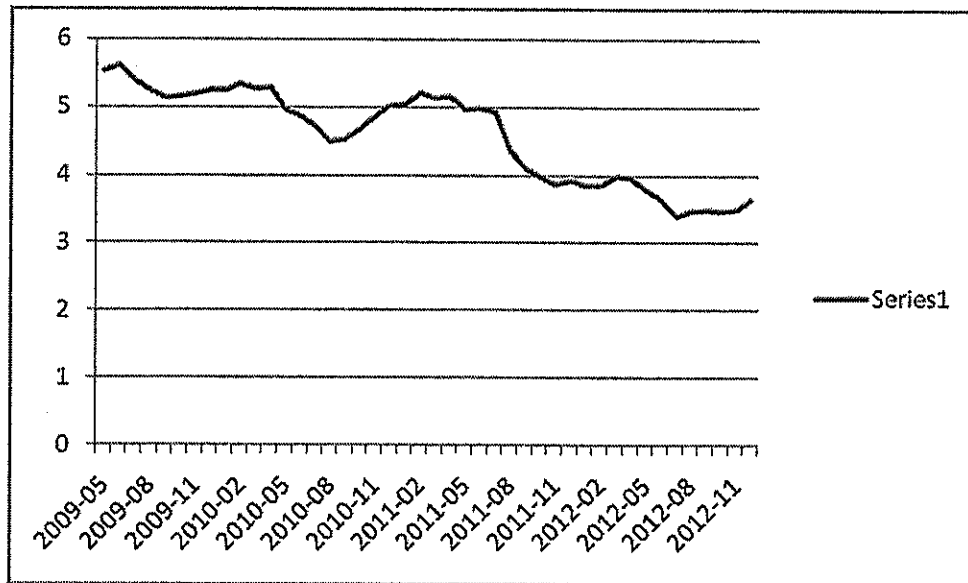
14 All rates are from the Federal Reserve Statistical Releases per [www.federalreserve.gov](http://www.federalreserve.gov).

**Table 3****30-Year U.S. Government Bonds**

A similar trend can be found with corporate bonds. AAA-rated corporate bonds fell from a rate of 5.54% at May 2009 to 4.72% at July 2010. Rates for AAA-rated corporate bonds continued to decline through 2011 and 2012, reaching a rate of 3.65% in December 2012, as shown below:

**Table 4**

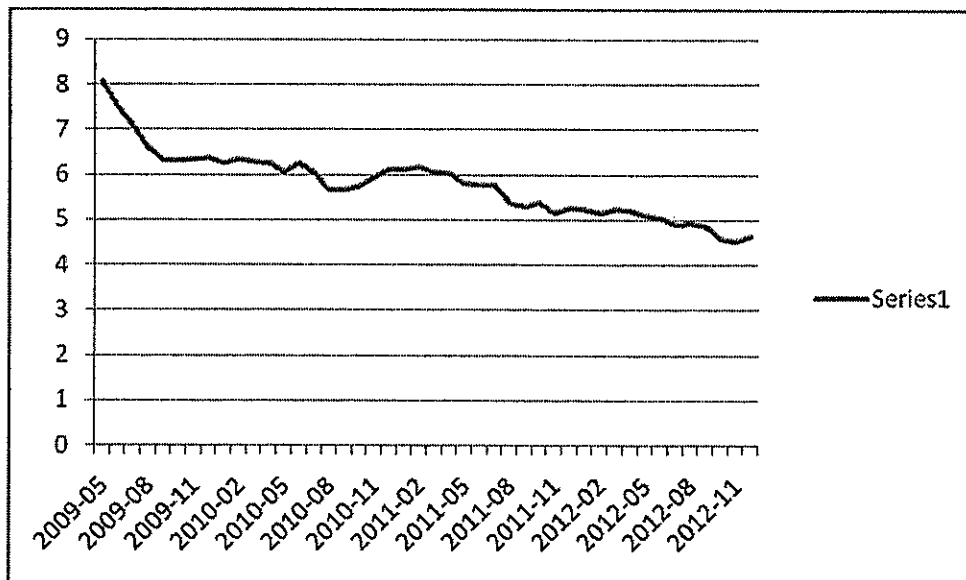
## Corporate Moody's AAA-Rated Bonds



A similar trend can be found with other corporate bonds. Baa-rated bonds declined from 8.06% in May 2009 to 6.01% in July 2010, and to 4.63% by December 2012:

**Table 5**

## Corporate Moody's Baa-Rated Bonds



1 Finally, dividend yields have generally declined as stock prices have increased since the  
2 Company's last case. The Dow Jones Industrial Index increased from 8,212.41 on May  
3 1, 2009 to 9,732.53 on July 1, 2010, and further increased to 13,412.55 by January 2,  
4 2013. The Dow Jones Utility Index has also increased significantly over this period,  
5 from 343.03 on May 1, 2009 to 356.46 by July 1, 2010, and to 461.46 on January 2,  
6 2013. These increases in stock prices have generally outpaced increases in utility  
7 dividends, resulting in lower dividend yields and an overall decline in equity returns  
8 evaluated based on the Discounted Cash Flow ("DCF") model.

9 **Q. Has the Company's embedded cost of debt declined as well?**

10 A. Yes, it has. The Company's embedded cost of debt has fallen from 6.21%, which was the  
11 embedded cost of debt claimed by PSE&G in its last base rate case filing, to 5.05% by  
12 October 2012.<sup>15</sup> Moreover, the current embedded cost of debt is a weighted average that  
13 includes some debt incurred at rates that are higher than current market rates. Thus, the  
14 substantial fall in the Company's embedded cost of long-term debt is indicative of an  
15 even greater fall in the marginal costs of more recently incurred debt.

16  
17 **Q. What is the significance of these declines in capital costs since the last case?**

18 A. The message is clear. While the parties can debate the specific impact of these reductions  
19 on the Company's overall cost of capital, the fact is that capital costs have declined  
20 substantially since the decision in BPU Docket No. GR09050422. Regardless of how a  
21 party chooses to determine the cost of capital, it is clear that the 10.3% cost of equity  
22 reflected in the WACC is no longer appropriate. It is also clear that a reduction to the  
23 cost of debt approved in the last base rate case is also warranted. These reductions in

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<sup>15</sup> Response to RCR-A-35.

capital costs alone provide sufficient rationale for rejecting the Company's proposed Extension Program, which would require ratepayers to pay returns based on a WACC that no longer reflects the Company's actual cost of capital.

**Q. Have there been lower returns on equity approved by the BPU since the Order in the last PSE&G rate case?**

A. Yes, there have. In its most recent Order approving a return on equity for an electric utility, the BPU approved a cost of equity of 9.75% for the Atlantic City Electric Company ("ACE"), which represents a substantial reduction from the equity return being proposed by PSE&G in this case.<sup>16</sup>

**Q. How does the Company's requested return of 10.3% compare to equity returns being awarded in other jurisdictions?**

A. Although regulatory awards tend to lag behind movements in the financial markets, the 10.3% claimed by PSE&G is high relative to recent returns. In addition, many cases are settled and it is sometimes difficult to draw conclusions about equity returns that are included in regulatory settlements. However, the most recent equity award of which I am aware was 9.5% awarded by the Kansas Corporation Commission ("KCC") to Kansas City Power and Light Company in December, 2012.<sup>17</sup> It should be noted that this award

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<sup>16</sup> I/M/O The Petition of Atlantic City Electric Company for Approval of Amendments to its Tariff to Provide for an Increase in Rates and Charges for Electric Service Pursuant to N.J.S.A. 48:2-21 and N.J.S.A. 48:2-21.1 and for Other Appropriate Relief, BPU Docket No. ER11080469.

<sup>17</sup> I/M/O the Application of Kansas City Power & Light Company to Make Certain Changes in Its Charges for Electric Service; KCC Docket No.: 12-KCPE-764-RTS Order (December 13, 2012).

1 was at the high end of the recommendation made by the KCC Staff, and thus even this  
2 award is likely to be higher than a reasonable return on equity for current cases.  
3

4 **Q. If the BPU approves the Solar 4 All™ Extension Program, what return on**  
5 **investment would you recommend be applied?**

6 A. I would recommend a return on equity of no higher than 9.75%, consistent with the most  
7 recent equity award by the BPU in an electric utility case. However, given the significant  
8 differences in risk between the Company's proposed program and a utility's traditional  
9 investment in electric plant, it may be reasonable to adopt a significantly lower return on  
10 equity. In addition, I would recommend that the BPU update the Company's return on  
11 debt to reflect the current embedded debt cost, as well as the current capital structure.  
12

13 **Q. Why do you recommend that the Company's return on equity be established at no**  
14 **higher than the return on equity recently approved for ACE?**

15 A. I am making this conservative recommendation because it may be appropriate to utilize a  
16 lower carrying charge to reflect the lower risk to shareholders of investment that is  
17 recovered through a surcharge mechanism. The Company's program, which guarantees  
18 the Company recovery of 100% of its costs through the RRC, is obviously of lower risk  
19 to PSE&G than its investment in traditional distribution plant. Accordingly, the return  
20 awarded to PSE&G for this program should be commensurate with this lower risk. If the  
21 BPU finds that the Company's shareholders are bearing no risk, then the Company's cost  
22 of debt would be an appropriate return to use as its cost of capital. If the BPU finds that  
23 the Company's shareholders are incurring some risk, then it may be appropriate to

1 include a return on equity that is higher than the Company's cost of debt, but lower than  
2 the return awarded on electric distribution plant recovered in base rates.

3  
4 **Q. Didn't the BPU approve the use of the WACC in the initial Solar 4 All™ program?**

5 A. Yes, it did. However, the Original Program was the subject of a Settlement Agreement  
6 among the parties and reflected various compromises that are not present in this case.  
7 Moreover, the Original Program was intended to jump-start New Jersey's solar energy  
8 market. While the state's Energy Master Plan currently calls for the continued  
9 development of renewable energy in New Jersey, there is no evidence that the proposed  
10 Extension Program is needed in order to comply with that objective, as further discussed  
11 in the testimony of Mr. Dismukes. Instead, the proposed Extension Program appears to  
12 be simply an attempt by PSE&G to establish another guaranteed revenue stream for  
13 shareholders at the expense of ratepayers, while shielding those shareholders from any  
14 risk of under-recovery.

15  
16 **E. Administrative Cost Recovery**

17 **Q. Has the Company quantified the administrative costs associated with the Extension**  
18 **Program?**

19 A. The Company's filing includes estimated annual administrative costs ranging from a low  
20 of \$1.32 million in 2013 to an average of \$4.47 million over the last seven years of the  
21 program. A total of \$73.88 million of administrative costs have been included, as shown  
22 in Schedule SS-S4AE-3. These costs include 10 full-time equivalent ("FTE") employees  
23 during the construction phase of the project, as stated in the response to RCR-A-11. It  
24 should be noted that these administrative costs are in addition to the operating costs of the

1 program such as operating and maintenance costs, insurance, real estate taxes, marketing,  
2 and rent. The Company's claim for \$73.88 million relates solely to the administration,  
3 not the operation, of the proposed Solar 4 All™ Extension Program.

4  
5 **Q. What concerns do you have with regard to the administrative costs included in the**  
6 **Company's proposal?**

7 A. Ratepayers have been responsible for paying all of the administrative costs for most of  
8 the solar programs that have been introduced over the past several years. However, in  
9 May 2012, the BPU issued an Order in BPU Docket No. EO11050311V, In the Matter of  
10 the Review of Utility Supported Solar Programs, which stated that in future SREC  
11 Financing programs "...all administrative fees would be paid for by the solar developer or  
12 the generation customer."<sup>18</sup> The Company's proposal in this case to recover all  
13 administrative costs from New Jersey ratepayers is inconsistent with this directive.  
14 Although the subject of the BPU Order was the extension of the SREC Financing  
15 programs, the concerns about administrative costs that resulted in this finding apply to the  
16 proposed Solar 4 All™ Extension Program as well. One of the objectives of Board Staff  
17 in developing the proposals that were ultimately adopted by the BPU was to "wean the  
18 solar industry from ratepayer subsidies." <sup>19</sup> One way to begin to wean the industry from  
19 ratepayer subsidies is to require solar developers or generators to absorb administrative  
20 costs associated with these programs. In the case of the proposed Solar 4 All™  
21 Extension Program, all administrative costs would be the responsibility of ratepayers.  
22 Thus, this provision of the Solar 4 All™ Extension Program is inconsistent with the

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18 I/M/O the Review of Utility Supported Solar Programs, BPU Docket No. EO11050311V, Order at page 27 (May 23, 2012).

19 Id., page 12.

1 overall intent of programs designed to promote the development of solar energy in New  
2 Jersey while minimizing the cost to ratepayers. In addition, requiring solar developers or  
3 generators to absorb administrative costs associated with SREC Financing programs but  
4 permitting PSE&G to collect administrative costs of the Solar 4 All™ Extension Program  
5 from ratepayers would provide PSE&G with an unfair advantage in the development of  
6 the solar energy market. The fact that the BPU has found that administrative costs should  
7 be borne by solar developers or generators is therefore another reason why PSE&G  
8 should be required to undertake this program on an unregulated basis if it wants to  
9 expand its presence in the solar energy market.

10  
11 **F. Difficulty in Tracking and Verifying Costs**

12 **Q. What concerns do you have regarding other costs of the proposed Solar 4 All™**  
13 **Extension Program?**

14 A. As discussed above, in addition to administrative costs, the Company has included in its  
15 revenue requirement claim significant other costs for depreciation, operation and  
16 maintenance expense, rent, insurance, and other costs. While some of these costs, such  
17 as depreciation and rent, are relatively easy to track and analyze, other costs are much  
18 more difficult to segregate and verify. This is especially true of overhead costs that are  
19 allocated to the Solar 4 All™ Extension Program or costs that are shared among various  
20 programs. Since cost assignment and tracking is handled directly through the Company's  
21 accounting system, it is extremely difficult for third parties, such as Rate Counsel, to  
22 verify the accuracy of the Company's cost claims for those programs whose costs are  
23 recovered through surcharge mechanisms. This makes it difficult to ensure that such

1 surcharges are based solely on incremental costs, and do not include any costs that are  
2 also being recovered through base rates. Moreover, since overhead costs are also being  
3 allocated to these programs as well as to cost centers recovered in base rates, it is difficult  
4 to ensure that ratepayers are not being charged twice due to variations in capitalization  
5 ratios that may have changed since base rates were last set in the Company's base rate  
6 case.

7 In addition, there are several other programs for which the Company has  
8 established, or is establishing, rider mechanisms to recover costs, including  
9 administrative and internal labor costs. For example, as noted, the BPU previously  
10 approved recovery of administrative and labor costs in the Solar Loan I, Solar Loan II,  
11 and original Solar 4 All™ Programs. In addition, the BPU has also approved PSE&G's  
12 Carbon Abatement Program,<sup>20</sup> which includes administrative and internal costs.  
13 Administrative and internal costs are also included in recovery mechanisms for the  
14 Company's Energy Efficiency Programs, Infrastructure Programs, and Demand Response  
15 Programs.<sup>21</sup> These recovery riders are in addition to well-established cost-recovery riders  
16 such as the Societal Benefits Charge ("SBC"). Thus, there are many opportunities for the

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20 I/M/O The Petition of Public Service Electric and Gas Company for Approval of Changes in its Electric and Gas Regional Greenhouse Gas Recovery Charge (RGGI) for the Carbon Abatement Program; for a Modification to the Carbon Abatement Program; and for Changes in the Tariff for Electric Service B.P.U.N.J. No. 14 Electric and Changes in the Tariff for Gas Service, B.P.U.N.J. No. 14 Gas, Pursuant to N.J.S.A. 48:3-98.1, BPU Docket No. ER09100824.

21 I/M/O a Proceeding for Infrastructure Investment and a Cost Recovery Mechanism for All Gas and Electric Utilities, BPU Docket No.: EO09010049 (January 29, 2009); I/M/O The Petition of New Jersey Natural Gas Company For Approval Of Energy Efficiency Programs With An Associated Cost Recovery Mechanism, BPU Docket No.: GO09010057; I/M/O The Petition of Public Service Electric And Gas Company Offering an Economic Energy Efficiency Stimulus Program in its Service Territory on a Regulated Basis and for Associated Cost Recovery Mechanism Pursuant to N.J.S.A.48:3-98.1, BPU Docket No.: EO09010058; IM/O The Petition of South Jersey Gas Company for Approval of An Energy Efficiency Program ("EEP") with an Associated Energy Tracker ("EET") Pursuant To N.J.S.A. 48:3-98.1; and to Modify Rate Schedule EGS-LV, BPU Docket No. GO09010059; and I/M/O The Petition of Pivotal Holdings, Inc. d/b/a Elizabethtown Gas for Approval of Energy Efficiency Programs and a Regional Greenhouse Gas Initiative Cost Recovery Rider, BPU Docket No.: GO09010060. (February 19, 2009).

1 Company to recover administrative costs as well as other internal labor costs. The  
2 difficulty in verifying the costs charged to ratepayers through surcharge mechanisms, as  
3 well as the opportunity for double-recovery, is another reason why the Company's  
4 proposed Extension Program should be rejected.

5  
6 **G. Summary**

7 **Q. Has the proliferation of these surcharge mechanisms had a detrimental impact on**  
8 **the ratemaking process?**

9 A. Yes, it has. These surcharge mechanisms have added millions of dollars to ratepayer bills  
10 without being subject to the level of scrutiny found in a base rate case, which includes a  
11 comprehensive examination of costs, revenues, costs of capital, and other items.  
12 Moreover, these surcharge mechanisms are much more profitable for PSE&G, especially  
13 if PSE&G can convince the BPU to guarantee shareholders a return based on the  
14 currently authorized WACC while avoiding all risk associated with the corresponding  
15 investment. Surcharge mechanisms have become big business for the electric and gas  
16 utilities in New Jersey and there is every indication that the utilities will attempt to  
17 continue this trend unless the BPU takes steps to control the proliferation of surcharges.

18 The current case is a good example of one such surcharge program that should be  
19 rejected. The Solar 4 All™ Extension Program is not needed to meet the state's  
20 renewable energy goals. The Extension Program contains an excessive return to  
21 shareholders as well as an outdated embedded cost of debt. It also burdens ratepayers  
22 with administrative costs that are more appropriately borne by solar developers and  
23 generators. Also, it includes millions of dollars of costs that are difficult to track and

<u>Company</u>	<u>Utility</u>	<u>State</u>	<u>Docket</u>	<u>Date</u>	<u>Topic</u>	<u>On Behalf Of</u>
Public Service Electric and Gas Co.	E	New Jersey	EO12080721	1/13	Solar 4 All - Extension Program	Division of Rate Counsel
Public Service Electric and Gas Co.	E	New Jersey	EO12080726	1/13	Solar Loan III Program	Division of Rate Counsel
Lane Scott Electric Cooperative	E	Kansas	12-MKEE-410-RTS	11/12	Acquisition Premium, Policy Issues	Citizens' Utility Ratepayer Board
Kansas City Power & Light Company	E	Kansas	11-KCPE-581-PRE	6/11	Pre-Determination of Ratemaking Principles	Citizens' Utility Ratepayer Board
United Water Delaware, Inc.	W	Delaware	10-421	5/11	Revenue Requirements Cost of Capital	Division of the Public Advocate
Mid-Kansas Electric Company	E	Kansas	11-MKEE-439-RTS	4/11	Revenue Requirements Cost of Capital	Citizens' Utility Ratepayer Board
South Jersey Gas Company	G	New Jersey	GR10060378-79	3/11	BGSS / CIP	Division of Rate Counsel
Chesapeake Utilities Corporation	G	Delaware	10-296F	3/11	Gas Service Rates	Division of the Public Advocate
Westar Energy, Inc.	E	Kansas	11-WSEE-377-PRE	2/11	Pre-Determination of Wind Investment	Citizens' Utility Ratepayer Board
Delmarva Power and Light Company	G	Delaware	10-295F	2/11	Gas Cost Rates	Attorney General
Delmarva Power and Light Company	G	Delaware	10-237	10/10	Revenue Requirements Cost of Capital	Division of the Public Advocate
Pawtucket Water Supply Board	W	Rhode Island	4171	7/10	Revenue Requirements	Division of Public Utilities and Carriers
New Jersey Natural Gas Company	G	New Jersey	GR10030225	7/10	RGGI Programs and Cost Recovery	Division of Rate Counsel
Kansas City Power & Light Company	E	Kansas	10-KCPE-415-RTS	6/10	Revenue Requirements Cost of Capital	Citizens' Utility Ratepayer Board
Atmos Energy Corp.	G	Kansas	10-ATMG-495-RTS	6/10	Revenue Requirements Cost of Capital	Citizens' Utility Ratepayer Board
Empire District Electric Company	E	Kansas	10-EPDE-314-RTS	3/10	Revenue Requirements Cost of Capital	Citizens' Utility Ratepayer Board
Delmarva Power and Light Company	E	Delaware	09-414 and 09-276T	2/10	Cost of Capital Rate Design Policy Issues	Division of the Public Advocate
Delmarva Power and Light Company	G	Delaware	09-385F	2/10	Gas Cost Rates	Division of the Public Advocate
Chesapeake Utilities Corporation	G	Delaware	09-398F	1/10	Gas Service Rates	Division of the Public Advocate
Public Service Electric and Gas Company	E	New Jersey	ER09020113	11/09	Societal Benefit Charge Non-Utility Generation Charge	Division of Rate Counsel
Delmarva Power and Light Company	G	Delaware	09-277T	11/09	Rate Design	Division of the Public Advocate
Public Service Electric and Gas Company	E/G	New Jersey	GR09050422	11/09	Revenue Requirements	Division of Rate Counsel

<u>Company</u>	<u>Utility</u>	<u>State</u>	<u>Docket</u>	<u>Date</u>	<u>Topic</u>	<u>On Behalf Of</u>
Public Service Electric and Gas Co.	E	New Jersey	EO12080721	1/13	Solar 4 All - Extension Program	Division of Rate Counsel
Public Service Electric and Gas Co.	E	New Jersey	EO12080726	1/13	Solar Loan III Program	Division of Rate Counsel
Lane Scott Electric Cooperative	E	Kansas	12-MKEE-410-RTS	11/12	Acquisition Premium, Policy Issues	Citizens' Utility Ratepayer Board
Mid-Kansas Electric Company	E	Kansas	09-MKEE-969-RTS	10/09	Revenue Requirements	Citizens' Utility Ratepayer Board
Westar Energy, Inc.	E	Kansas	09-WSEE-925-RTS	9/09	Revenue Requirements	Citizens' Utility Ratepayer Board
Jersey Central Power and Light Co.	E	New Jersey	EO08050326 EO08080542	8/09	Demand Response Programs	Division of Rate Counsel
Public Service Electric and Gas Company	E	New Jersey	EO09030249	7/09	Solar Loan II Program	Division of Rate Counsel
Midwest Energy, Inc.	E	Kansas	09-MDWE-792-RTS	7/09	Revenue Requirements	Citizens' Utility Ratepayer Board
Westar Energy and KG&E	E	Kansas	09-WSEE-641-GIE	6/09	Rate Consolidation	Citizens' Utility Ratepayer Board
United Water Delaware, Inc.	W	Delaware	09-60	6/09	Cost of Capital	Division of the Public Advocate
Rockland Electric Company	E	New Jersey	GO09020097	6/09	SREC-Based Financing Program	Division of Rate Counsel
Tidewater Utilities, Inc.	W	Delaware	09-29	6/09	Revenue Requirements Cost of Capital	Division of the Public Advocate
Chesapeake Utilities Corporation	G	Delaware	08-269F	3/09	Gas Service Rates	Division of the Public Advocate
Delmarva Power and Light Company	G	Delaware	08-266F	2/09	Gas Cost Rates	Division of the Public Advocate
Kansas City Power & Light Company	E	Kansas	09-KCPE-246-RTS	2/09	Revenue Requirements Cost of Capital	Citizens' Utility Ratepayer Board
Jersey Central Power and Light Co.	E	New Jersey	EO08090840	1/09	Solar Financing Program	Division of Rate Counsel
Atlantic City Electric Company	E	New Jersey	EO06100744 EO08100875	1/09	Solar Financing Program	Division of Rate Counsel
West Virginia-American Water Company	W	West Virginia	08-0900-W-42T	11/08	Revenue Requirements	The Consumer Advocate Division of the PSC
Westar Energy, Inc.	E	Kansas	08-WSEE-1041-RTS	9/08	Revenue Requirements Cost of Capital	Citizens' Utility Ratepayer Board
Artesian Water Company	W	Delaware	08-96	9/08	Cost of Capital, Revenue, New Headquarters	Division of the Public Advocate
Comcast Cable	C	New Jersey	CR08020113	9/08	Form 1205 Equipment & Installation Rates	Division of Rate Counsel
Pawtucket Water Supply Board	W	Rhode Island	3945	7/08	Revenue Requirements	Division of Public Utilities and Carriers
New Jersey American Water Co.	WWW	New Jersey	WR08010020	7/08	Consolidated Income Taxes	Division of Rate Counsel

<u>Company</u>	<u>Utility</u>	<u>State</u>	<u>Docket</u>	<u>Date</u>	<u>Topic</u>	<u>On Behalf Of</u>
Public Service Electric and Gas Co.	E	New Jersey	EO12080721	1/13	Solar 4 All - Extension Program	Division of Rate Counsel
Public Service Electric and Gas Co.	E	New Jersey	EO12080726	1/13	Solar Loan III Program	Division of Rate Counsel
Lane Scott Electric Cooperative	E	Kansas	12-MKEE-410-RTS	11/12	Acquisition Premium, Policy Issues	Citizens' Utility Ratepayer Board
New Jersey Natural Gas Company	G	New Jersey	GR07110889	5/08	Revenue Requirements	Division of Rate Counsel
Kansas Electric Power Cooperative, Inc.	E	Kansas	08-KEPE-597-RTS	5/08	Revenue Requirements Cost of Capital	Citizens' Utility Ratepayer Board
Public Service Electric and Gas Company	E	New Jersey	EX02060363 EA02060366	5/08	Deferred Balances Audit	Division of Rate Counsel
Cablevision Systems Corporation	C	New Jersey	CR07110894, et al.	5/08	Forms 1240 and 1205	Division of Rate Counsel
Midwest Energy, Inc.	E	Kansas	08-MDWE-594-RTS	5/08	Revenue Requirements Cost of Capital	Citizens' Utility Ratepayer Board
Chesapeake Utilities Corporation	G	Delaware	07-246F	4/08	Gas Service Rates	Division of the Public Advocate
Comcast Cable	C	New Jersey	CR07100717-946	3/08	Form 1240	Division of Rate Counsel
Generic Commission Investigation	G	New Mexico	07-00340-UT	3/08	Weather Normalization	New Mexico Office of Attorney General
Southwestern Public Service Company	E	New Mexico	07-00319-UT	3/08	Revenue Requirements Cost of Capital	New Mexico Office of Attorney General
Delmarva Power and Light Company	G	Delaware	07-239F	2/08	Gas Cost Rates	Division of the Public Advocate
Atmos Energy Corp.	G	Kansas	08-ATMG-280-RTS	1/08	Revenue Requirements Cost of Capital	Citizens' Utility Ratepayer Board

## **APPENDIX B**

### **Referenced Data Requests**

**RCR-A-7**

**RCR-A-10**

**RCR-A-11**

**RCR-A-35**

**RCR-P-3 (BPU Docket No. EO12080726)**

RESPONSE TO RATE COUNSEL  
REQUEST: RCR-A-7  
WITNESS(S): SWETZ  
PAGE 1 OF 1  
SOLAR4ALL EXTENSION

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
INVESTMENT IN YEARS 2023 THROUGH 2027

QUESTION:

Regarding the "Program Investment" shown in Column 1 of Schedule SS-S4AE-3, page 1, please identify and quantify all investment shown for the years 2023-2027.

ANSWER:

The investments shown in the later years of the program are to replace worn out inverters and communication equipment. The lives of these solar components are significantly shorter than the life of the panels themselves and require replacement to maximize the productive life of the panels.

RESPONSE TO RATE COUNSEL  
REQUEST: RCR-A-10  
WITNESS(S): FORLINE  
PAGE 1 OF 1  
SOLAR4ALL EXTENSION

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
PLANS AFTER 20 YEAR LIFESPAN

QUESTION:

Please detail the company's plans for the Solar 4 All plant investment after the 20 year lifespan has elapsed.

ANSWER:

For purposes of modeling and forecasting costs, the Company assumed that the equipment will be removed at the end of the 20 year lifespan. As the 20 year lifespan approaches, the Company and the host customer will consider various options, including but not limited to removing the equipment, continuing the lease, or selling the equipment to the host customer.

RESPONSE TO RATE COUNSEL  
REQUEST: RCR-A-11  
WITNESS(S): FORLINE  
PAGE 1 OF 1  
SOLAR4ALL EXTENSION

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
COST TO OWN AND MAINTAIN THE SYSTEMS

QUESTION:

Please provide all supporting assumptions, calculations, and workpapers for the estimated cost of \$39.4 million to own and maintain the systems over the first five years of the implementation/construction phase, as referenced in paragraph 3 of the Petition.

ANSWER:

The estimated cost of \$39.4 million to operate and maintain the systems contained in the Petition is incorrect; the correct value of \$41.6 million is reflected in the revenue requirement calculation that was filed. The following table provides the details supporting this request.

	2013	2014	2015	2016	2017	Total
Rent	-	592,635	1,767,733	4,538,564	8,029,231	14,928,163
Insurance Cost	16,201	200,706	632,442	1,301,450	1,795,580	3,946,379
Up-keep & Maintenance Cost	-	430,171	1,260,396	3,283,172	5,902,038	10,875,777
Internal Admin Labor (O&M)	1,321,704	1,823,951	1,887,789	1,953,862	2,209,927	9,197,233
Real Estate Taxes	-	-	627,699	775,836	799,111	2,202,646
Marketing	150,000	206,000	141,453	-	-	497,453
Total	1,487,905	3,253,463	6,317,512	11,852,884	18,735,887	41,647,651

Notes

- 1) Rent - \$.04728/kWh
- 2) Insurance Cost - \$.265 / \$100 value for Landfills, \$.200 / \$100 value for all other segments
- 3) Upkeep and Maintenance Cost - \$.035 / kWh
- 4) Internal Admin Labor - includes 10 FTEs during the construction phase
- 5) Real Estate Taxes - assumed \$770,000 per year escalating at 3%
- 6) Marketing Costs - assumed \$200,000 per year for the first 2 1/2 years

RESPONSE TO RATE COUNSEL  
REQUEST: RCR-A-35  
WITNESS(S): POWELL  
PAGE 1 OF 3  
SOLAR4ALL EXTENSION

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
AFUDC CALCULATIONS

QUESTION:

Please provide all underlying calculations for the debt and equity rates shown in the response to RCR-A-21, and show how short-term debt was factored into the AFUDC calculation.

ANSWER:

Please see attached calculations for the debt and equity rates shown in RCR-A-21, which shows how short-term debt was factored into the AFUDC calculation.

PSE&G  
AFUDC Rate Calculation for 2011

RCR-A-35  
PAGE 2 OF 3

		Dec-2011
S	Average short-term debt	84,833,333
s	Short-term debt interest rate	0.30%
D	Long-term debt	4,283,776,399
d	Long-term debt interest rate	5.05%
P	Preferred stock	-
p	Preferred stock cost rate	0.00%
C	Common equity	4,424,787,817
c	Common equity cost rate	10.30%
W	Average CWIP balance	388,146,691
<b>Borrowed funds:</b>		
$s (S/W) + d * [D / (D+P+C)] * (1 - S/W)$		0.30%
$(S / W)$		0.218560
$s (S / W)$		0.000656
$d$		5.05%
$D / (D+P+C)$		0.491904
$d * [D / (D+P+C)]$		0.024841
$(1 - S / W)$		0.78144
$s (S/W) + d * [D / (D+P+C)] * (1 - S/W)$		0.026068
<b>Other Funds: ( Equity Portion)</b>		
$(1 - S/W) * \{ p [P / (D+P+C)] + c [C / (D+P+C)] \}$		0.78144
$(1 - S/W)$		0.00%
$p$		0.000000
$P / (D+P+C)$		0.000000
$p [P / (D+P+C)]$		0.000000
$c$		10.30%
$C / (D+P+C)$		0.508096
$c [C / (D+P+C)]$		0.052334
$(1 - S/W) * \{ p [P / (D+P+C)] + c [C / (D+P+C)] \}$		0.040896
<b>Gross AFUDC Calculated Rate</b>		6.10%

Eff. 06/30/2010, per BPU order #GR09050422

Debt Rate

Equity Rate

FSE&G  
AFUDC Rate Calculation for 2012

S	Average short-term debt (Estimate)	Oct-2012
s	Short-term debt interest rate (Estimate)	4,441,667
D	Long-term debt (Actual End of Prior Year Balance)	0.32%
d	Long-term debt interest rate (Actual - Weighted Average Cost)	4,270,460,139
P	Preferred stock cost rate (Actual End of Prior Year Balance)	5.05%
p	Preferred stock cost rate (Actual - Weighted Average Cost)	-
C	Common equity (Actual End of Prior Year Balance)	0.00%
c	Common equity cost rate - (Per Latest Rate Case Ruling)	4,646,621,227
W	Average CWIP balance (Estimated Current Year 13 Month Average)	10.30%
		846,457,756
<b>Borrowed funds:</b>		
	$s (S/W) + d * [D / (D+P+C)] * (1 - S/W)$	0.32%
	$s (S / W)$	0.005247
	$s (S / W)$	0.000017
	$d$	5.05%
	$D / (D+P+C)$	0.478908
	$d * [D / (D+P+C)]$	0.024207
	$(1 - S / W)$	0.99475
	$s (S/W) + d * [D / (D+P+C)] * (1 - S/W)$	0.024097
<b>Other Funds: (Equity Portion)</b>		
	$(1 - S/W) * \{p [P / (D+P+C)] + c [C / (D+P+C)]\}$	0.99475
	$(1 - S/W)$	0.00%
	$p$	0.000000
	$P / (D+P+C)$	0.000000
	$p [P / (D+P+C)]$	0.000000
	$c$	10.30%
	$C / (D+P+C)$	0.521092
	$c [C / (D+P+C)]$	0.053672
	$(1 - S/W) * \{p [P / (D+P+C)] + c [C / (D+P+C)]\}$	0.053391
	<b>Gross AFUDC Calculated Rate</b>	7.75%

Eff 06/30/2010, per BPU order #GR08050422

RESPONSE TO RATE COUNSEL  
REQUEST: RCR-P-3  
WITNESS(S): FORLINE  
PAGE 1 OF 3  
SOLAR LOAN III

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
AUCTION FORMAT

QUESTION:

For purposes of this request, please refer to paragraph 6 of the Company's Petition that notes that the Solar Loan III program will utilize an auction format for SRECs comparable to the Solar Loan II program.

- a. Please provide all auction bid data, for each periodic auction held for purposes of selling Solar Loan I and Solar Loan II SRECs. Provide all supporting workpapers in electronic spreadsheet form with all links and formulas intact, provide all source data used, and explain all assumptions and calculations used. To the extent the data requested is not available in the form requested, please provide the information in the form that most closely matches what has been requested.
- b. Please explain, in general terms, the potential rate impact to customers that may arise as a result of not conducting an auction for SRECs until the 2016 Energy Year.
- c. Please provide any analyses conducted by the Company that have estimated the rate impact associated with holding SRECs received under the Solar Loan III program until 2016. Please identify where this impact has been estimated/included in the Company's filing and to the extent this is not included in the Company's current filing, please provide all supporting workpapers in electronic spreadsheet form with all links and formulas intact, provide all source data used, and explain all assumptions and calculations used. To the extent the data requested is not available in the form requested, please provide the information in the form that most closely matches what has been requested.

ANSWER:

- a. The nature and design of the SREC auctions require no "bid" information, work papers or spreadsheets, however they do generate a clearing price for each product sold. A table of the clearing prices for the products sold in the various SREC auctions is attached.
- b&c. As stated in the response to RCR-A-15, delaying the SREC Auction until January 2016 results in a revenue requirement increase of \$552,098 based on the assumption that all SREC's will be transferred to PSE&G and sold through SREC auctions at the same price of \$200 per SREC. For the calculation of the \$552,098 revenue increase, see workbook RCR-A-15. See workbook RCR-P-3 for the calculation of the rate and bill impacts related to the \$552,098 revenue requirement increase from delaying the SREC auction sale. Column 1 of workbook RCR-P-3 shows the Solar Loan III revenue requirements as filed, with the SREC auctions delayed until January 2016. Column 2 shows the revenue requirements if the SREC's are auctioned quarterly from the start of the Program. Column 3 shows the impact on revenue requirements of withholding the SREC auction until 2016. As shown in Column 5, the rate impact for the revenue requirement increase is \$0.000006, with SUT. This rate increase has a bill impact of \$0.04 per year, or 0.003% as shown in Columns 16 and 18, respectively.

**Solar Loan Program Auction History**

Month	Program Type	Vintage	Number of SRECs	Clearing Price
Aug-09	SLP 1	N/A	1,352	\$ 688.52
Feb-10	SLP 1	N/A	2,800	\$ 685.06
Jul-10	SLP 1	N/A	5,750	\$ 688.03
Oct-10	SLP 1	N/A	5,847	\$ 665.12
Apr-11	SLP 1	EY 2010	5,425	\$ 669.69
	SLP 2	EY 2010	187	\$ 669.69
Jul-11	SLP 1	EY 2010	248	\$ 480.00
		EY 2011	5,463	\$ 475.00
	SLP 2	EY 2010	5	\$ 480.00
		EY 2011	406	\$ 475.00
Aug-11	SLP 1	EY 2011	2,111	\$ 479.75
	SLP 2	EY 2011	724	\$ 479.75
Oct-11	SLP 1	EY 2011	12	\$ 669.01
		EY 2012	8,153	\$ 227.03
	SLP 2	EY 2011	166	\$ 669.01
		EY 2012	2,418	\$ 227.03
Feb-12	SLP 1	EY 2012	5,993	\$ 171.63
	SLP 2	EY 2012	2,721	\$ 171.63
May-12	SLP 1	EY 2011	17	\$ 136.19
		EY 2012	5,748	\$ 155.00
	SLP 2	EY 2011	28	\$ 136.19
		EY 2012	4,180	\$ 155.00
Jul-12	SLP 1	EY 2012	5,671	\$ 135.68
	SLP 2	EY 2012	5,302	\$ 135.68

**PSE&G Solar Loan III Program**  
**Solar Loan III - Rate Impact Analysis**

ROR-P-3(c)  
 PAGE 3 OF 3

7,380 Avg RS kWh / yr.  
 760 Avg RS kWh / Summer Month  
 530 Avg RS kWh / Winter Month  
 0.001283 Current electric RRC (\$/kWh)

7% SUT Rate  
 43,004,050 kWh Sales (000) - Annual (Oct/Sep)  
 76,517,123 kWh Sales (000) - Jan 13/Sep 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Solar Loan III Revenue Requirements (As Filed)	Solar Loan III Revenue Requirements (No Delay In SREC Auctions)	Solar Loan III Impact on Revenue Requirements of Withholding Auction	Solar Loan III w/ SUT (\$/kWh)	Class Average Rate w/SUT - \$/kWh <sup>1</sup>	RS	RHS	RLM	GLP	LPL-S	LPL-P	HTS-S	Summer Monthly Bill	Winter Monthly Bill	Annual Bill	Change in RS Typical Annual Bill (\$'s)	% Change in RS Typical Annual Bill
Current						0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	1,336.60	0.000%
2013						0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Jan14 - Sep14	744,880	744,880	-	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Oct14-Sep15	1,008,038	992,714	15,324	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Oct15-Sep16	3,458,116	3,180,483	277,634	0.000006	0.000006	0.181603	0.154700	0.172646	0.173785	0.146644	0.119028	0.110224	1.01	0.68	9.48	0.04	0.003%
Oct16-Sep17	6,769,267	6,510,126	259,141	0.000006	0.000006	0.181603	0.154700	0.172646	0.173785	0.146644	0.119028	0.110224	1.01	0.68	9.48	0.04	0.003%
Oct17-Sep18	10,037,126	10,037,126	-	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Oct18-Sep19	12,826,148	12,826,148	-	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Oct19-Sep20	12,833,367	12,833,367	-	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Oct20-Sep21	12,801,347	12,801,347	-	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Oct21-Sep22	12,770,232	12,770,232	-	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Oct22-Sep23	12,740,370	12,740,370	-	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Oct23-Sep24	12,712,417	12,712,417	-	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Oct24-Sep25	11,774,375	11,774,375	-	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Oct25-Sep26	9,119,719	9,119,719	-	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Oct26-Dec27	5,789,409	5,789,409	-	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%
Total	126,656,133	126,104,035	552,098	-	-	0.181603	0.154694	0.172640	0.173779	0.146638	0.119022	0.110218	1.00	0.68	9.44	-	0.000%

From Col 1 / kWh Col 2 \* (1 +  
 Schedule SS- Sales) (Rnd SUT Rate)  
 SIII-2 Col 22 to 6 dec.) Rnd 6

	RS	RHS	RLM	GLP	LPL-S	LPL-P	HTS-S
2013	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Jan14 - Sep14	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Oct14-Sep15	0.003%	0.004%	0.003%	0.003%	0.004%	0.005%	0.005%
Oct15-Sep16	0.003%	0.004%	0.003%	0.003%	0.004%	0.005%	0.005%
Oct16-Sep17	0.003%	0.004%	0.003%	0.003%	0.004%	0.005%	0.005%
Oct17-Sep18	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Oct18-Sep19	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Oct19-Sep20	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Oct20-Sep21	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Oct21-Sep22	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Oct22-Sep23	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Oct23-Sep24	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Oct24-Sep25	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%

<sup>1</sup>All customers assumed to have BGS Supply  
<sup>2</sup>Initial rate period is from Jan-13 to Sep-14

