



May 10, 2016

In the Matter of the Petition of  
Public Service Electric and Gas Company  
for Approval of a Second Extension of a  
Solar Generation Investment Program  
and 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, N.J.S.A. 48:2-21.1, and N.J.S.A. 48:3-98.1

BPU Docket Nos. \_\_\_\_\_

***VIA ELECTRONIC MAIL & OVERNIGHT MAIL DELIVERY***

Irene Kim Asbury, Secretary  
Board of Public Utilities  
44 South Clinton Avenue, 9th Flr.  
P.O. Box 350  
Trenton, New Jersey 08625-0350

Dear Secretary Asbury:

Enclosed please find an original and ten copies of Public Service Electric and Gas Company's (PSE&G, the Company) filing in the above-referenced matter. In addition, PSE&G is providing copies of the electronic workpapers related to this filing via e-mail.

Very truly yours,

A handwritten signature in blue ink that reads "Matthew Weissman".

Attachment  
C Attached Service List (E-Mail Only)

**CD – Electronic Workpapers**

Stefanie Brand (2)  
Jerome May  
Secil Onat  
Stacy Peterson  
Caroline Vachier

**BPU**

William Agee Esq.  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-0350  
(609) 292-1616  
william.agee@bpu.state.nj.us

**BPU**

Scott Hunter  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton Nj 08625-0350  
(609) 292-1956  
B.Hunter@bpu.state.nj.us

**BPU**

Jerome May  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-0350  
(609) 292-3960  
Jerome.may@bpu.state.nj.us

**BPU**

Andrea Reid  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-0350  
(609) 292-4518  
andrea.reid@bpu.state.nj.us

**BPU**

Michael Winka  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-0350  
(609) 777-3312  
m.winka@bpu.state.nj.us

**DAG**

Alex Moreau DAG  
NJ Dept. of Law & Public Safety  
Division of Law  
124 Halsey Street, 5th Flr.  
P.O. Box 45029  
Newark NJ 07101  
(973) 648-3762  
Alex.Moreau@dol.lps.state.nj.us

**BPU**

Rachel Boylan  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-0350  
(609) 292-1458  
Rachel.Boylan@bpu.state.nj.us

**BPU**

Son Lin Lai  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-0350  
(609) 292-2098  
son-lin.lai@bpu.state.nj.us

**BPU**

Secil Onat  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-0350  
secil.onat@bpu.state.nj.us

**BPU**

Bethany Rocque-Romaine Esq.  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-0350  
(609) 292-1496  
bethany.rocque-romaine@bpu.state.nj.us

**DAG**

Veronica A. Beke  
NJ Dept. of Law & Public Safety  
Division of Law  
124 Halsey Street, 5th Flr.  
P.O. Box 45029  
Newark NJ 07101  
Veronica.Beke@dol.lps.state.nj.us

**DAG**

Caroline Vachier DAG  
NJ Dept. of Law & Public Safety  
Division of Law  
124 Halsey Street, 5th Flr.  
P.O. Box 45029  
Newark NJ 07101  
(973) 648-3709  
caroline.vachier@dol.lps.state.nj.us

**BPU**

Paul Flanagan  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-2836  
paul.flanagan@bpu.state.nj.us

**BPU**

Christine Lin  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-0350  
(609) 292-2956  
christine.lin@bpu.state.nj.us

**BPU**

Stacy Peterson  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-0350  
(609) 292-4517  
stacy.peterson@bpu.state.nj.us

**BPU**

Marisa Slaten  
Board of Public Utilities  
44 South Clinton Avenue  
3rd Floor, Suite 314  
P.O. Box 350  
Trenton NJ 08625-0350  
(609) 292-0087  
marisa.slaten@bpu.state.nj.us

**DAG**

Carolyn McIntosh  
NJ Dept. of Law & Public Safety  
Division of Law  
124 Halsey Street, 5th Flr.  
P.O. Box 45029  
Newark NJ 07101  
(973) 648-3762  
carolyn.mcintosh@dol.lps.state.nj.us

**DAG**

T. David Wand  
NJ Dept. of Law & Public Safety  
Division of Law  
124 Halsey Street, 5th Flr.  
P.O. Box 45029  
Newark NJ 07101  
(973) 648-3441  
david.wand@dol.lps.state.nj.us

**PSE&G**

Joseph F. Accardo, Jr.  
PSEG Services Corporation  
80 Park Plaza, T5G  
P.O. Box 570  
Newark NJ 07102  
(973) 430-5811  
joseph.accardojr@pseg.com

**PSE&G**

Matthew M. Weissman Esq.  
PSEG Services Corporation  
80 Park Plaza, T5  
P.O. Box 570  
Newark NJ 07102  
(973) 430-7052  
matthew.weissman@pseg.com

**Rate Counsel**

Shelly Massey  
Division of Rate Counsel  
140 East Front Street, 4th Flr.  
P.O. Box 003  
Trenton NJ 08625  
(609) 984-1460  
smassey@rpa.state.nj.us

**Rate Counsel**

Felicia Thomas-Friel  
Division of Rate Counsel  
140 East Front Street, 4th Flr.  
P.O. Box 003  
Trenton NJ 08625  
(609) 984-1460  
fthomas@rpa.state.nj.us

**PSE&G**

Sheree Kelly Esq.  
PSEG Services Corporation  
80 Park Plaza, T5  
P.O. Box 570  
Newark NJ 07102  
(973) 430-6468  
sheree.kelly@pseg.com

**Rate Counsel**

Stefanie A. Brand  
Division of Rate Counsel  
140 East Front Street, 4th Flr.  
P.O. Box 003  
Trenton NJ 08625  
(609) 984-1460  
sbrand@rpa.state.nj.us

**Rate Counsel**

Maria Novas-Ruiz Esq.  
Division of Rate Counsel  
140 East Front Street, 4th Flr.  
P.O. Box 003  
Trenton NJ 08625  
(609) 984-1460  
mnovas.ruiz@rpa.state.nj.us

**PSE&G**

Connie E. Lembo  
PSEG Services Corporation  
80 Park Plaza, T5  
P.O. Box 570  
Newark NJ 07102  
(973) 430-6273  
constance.lembo@pseg.com

**Rate Counsel**

Kurt Lewandowski Esq.  
Division of Rate Counsel  
140 East Front Street, 4th Flr.  
P.O. Box 003  
Trenton NJ 08625  
(609) 984-1460  
klewando@rpa.state.nj.us

**Rate Counsel**

Sarah Steindel  
Division of Rate Counsel  
140 East Front Street, 4th Flr.  
P.O. Box 003  
Trenton NJ 08625  
(609) 984-1460  
ssteinde@rpa.state.nj.us

**STATE OF NEW JERSEY  
BOARD OF PUBLIC UTILITIES**

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IN THE MATTER OF THE PETITION OF )  
PUBLIC SERVICE ELECTRIC AND GAS )  
COMPANY FOR APPROVAL OF A SECOND )  
EXTENSION OF A SOLAR GENERATION )  
INVESTMENT PROGRAM AND 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, )  
N.J.S.A. 48:2-21.1, AND N.J.S.A. 48:3-98.1 )  
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**P E T I T I O N  
SOLAR 4 ALL<sup>®</sup> EXTENSION II**

BPU Docket No. \_\_\_\_\_

Public Service Electric and Gas Company (“PSE&G” or the “Company”), a corporation of the State of New Jersey, having its principal offices at 80 Park Plaza, Newark, New Jersey, respectfully petitions the New Jersey Board of Public Utilities (“Board” or “BPU”), pursuant to N.J.S.A. 48:3-98.1, et seq., as follows:

**EXECUTIVE SUMMARY OF THE PROPOSED SOLAR 4 ALL EXTENSION II  
PROGRAM**

1. PSE&G is proposing to extend its Solar Generation Investment Program called the PSE&G Solar 4 All Extension Program (“Extension Program” or “Solar 4 All Extension Program”), through the addition of 100 MW-dc of solar capacity to New Jersey’s renewable portfolio over four years. The Solar 4 All Extension II Program (“Extension II Program” or the “Program”), will be comprised of a single segment that will expand on the development of solar installations on landfills and brownfields in the State of New Jersey, originally initiated through the Extension Program.

As stated by PSE&G's Director of Solar Energy, Todd W. Hranicka, in his direct testimony submitted herewith as Attachment A:

PSE&G, with the support of the Administration, the Legislature, the Board, and the Division of Rate Counsel, has been and continues to be an essential force in facilitating economic growth, creating jobs and meeting the State's renewable energy goals through the development of solar systems. Approval of the Extension II Program will allow PSE&G to continue in that critical role consistent with the solar energy directives set forth in New Jersey's Energy Master Plan and the Solar Act. PSE&G can take on more challenging sites, perform at a competitive cost, infuse needed capital into the market, provide governments and private landfill owners with a new source of revenue through lease payments, and create a substantial number of jobs and economic activity in difficult economic times.

PSE&G is unique in that it combines substantial experience in the development of large scale grid-connected projects with the financial wherewithal to utilize available tax benefits and execute solar projects on a large scale. The Extension II Program will have a positive effect on New Jersey's economic growth and allow all customers the benefits of solar power. With the support of our customers, I believe we must continue to forge ahead as other innovators have in the past, and accomplish this visionary Solar 4 All Extension II Program work through the collaboration of PSE&G, the Board, the Division of Rate Counsel, solar developers and installers, and all stakeholders for the benefit of New Jersey.

2. It is estimated that the Extension II Program's capital investment will be approximately \$240 million over a five-year period. Additionally, the Company is requesting approval of \$36 million for risk and contingency, which includes unforeseen site conditions. Over the first five years of the implementation/construction phase of the Extension II Program, PSE&G expects to expend approximately \$20 million to operate and maintain ("O&M") the systems placed in service. Therefore, the total five-year spending request is approximately \$296 million. The O&M figure includes general plant upkeep and maintenance, insurance, lease

payments, costs associated with program administration, and project management of the Extension II Program. The Extension II Program includes capital replacement for inverters and communication equipment over the 25-year life of the Solar Systems, plus expenses as listed above from 2022 through 2046.

3. The Extension II Program will continue to support the State of New Jersey in meeting its land use and renewable energy policy objectives, reflected in the State's Energy Master Plan, by directing solar investment toward landfill and brownfields. PSE&G is a well-established, stable organization that has shown it can manage the costs, greater complexity, longer development timelines and greater environmental and financial risk of these types of projects. PSE&G's successful implementation of the Solar 4 All programs to date proves PSE&G has a unique mix of capabilities, which are unmatched in the state and have supported the achievement of New Jersey's solar power goals and provided tangible benefits to our ratepayers, our employees, our shareholders, New Jersey's solar industry, and the citizens of New Jersey.

4. In the course of implementing the existing Extension Program, PSE&G has identified additional landfill/brownfield projects that have been deemed suitable for solar development.

5. The Extension II Program is anticipated to generate approximately 575 full time equivalent (FTE) direct in-state jobs, as well as another 185 FTE jobs for supply chain related services and 240 FTE jobs for induced employment, which is expected to increase New Jersey economic output by about \$155 million.

6. The recently enacted Protecting Americans from Tax Hikes Act of 2015 (“Tax Act of 2015”) extended both an enhanced investment tax credit (“ITC”) on solar projects through 2021 and bonus depreciation on investments through 2019. PSE&G can utilize both of these tax benefits, which will reduce the cost of the Program to ratepayers. Given the long lead times to complete landfill projects, this is the ideal time to implement a new program to take advantage of the significant savings from the enhanced ITC and bonus depreciation extension.

7. The testimony of Company witness Paul R. Moul, included as Attachment D to this Petition, demonstrates that 11.00% is the appropriate return on equity (“ROE”) for this Program and all of the Company’s operations. In an effort to facilitate a timely resolution of this important initiative and thereby continue the work and investment in these landfill/brownfield solar projects, the Company limits its request to the 9.75% ROE recently approved for the Company’s infrastructure programs.

8. The Solar Generation Investment Extension II Program component (“SGIEIIPC”) of the electric Green Program Recovery Charge (“GPRC”) will be \$0.000020 per kWh without Sales and Use Tax (“SUT”) or \$0.000021 per kWh including SUT. When combined with the other current electric GPRC components, the combined charge is \$0.001407 per kWh without SUT, and \$0.001505 per kWh with SUT.

9. As a result of the proposed rate set forth on Attachment G, PSE&G’s typical residential electric customer using 750 kWh in each summer month and 7,200 kWh annually would experience an annual bill increase from \$1,243.92 to \$1,244.08 based on Delivery Rates and Basic Generation Service Residential Small Commercial Pricing (“BGS-RSCP”) charges in

effect on May 7, 2016, and assuming that the customer receives BGS-RSCP service from PSE&G. The residential rate impacts are set forth on Attachment H.

**BACKGROUND, INCLUDING NEW JERSEY'S ENERGY MASTER PLAN,  
PASSAGE OF THE SOLAR ACT OF 2012,  
AND EXECUTION OF THE SOLAR 4 ALL EXTENSION**

10. PSE&G is a public utility engaged in the distribution of electricity and the provision of electric Basic Generation Service ("BGS"), and distribution of gas and the provision of Basic Gas Supply Service ("BGSS"), for residential, commercial and industrial customers within the State of New Jersey. PSE&G provides service to approximately 2.2 million electric and 1.8 million gas customers in an area having a population of approximately six million persons and which extends from the Hudson River opposite New York City, southwest to the Delaware River at Trenton and south to Camden, New Jersey.

11. Petitioner is subject to regulation by the BPU for the purposes of setting its retail distribution rates and to assure safe, adequate and reliable electric distribution and natural gas distribution service, pursuant to N.J.S.A. 48:2-21, et seq.

12. On January 13, 2008, the Global Warming Response Act ("the Act"), N.J.S.A. 26:2C-37, et seq., was signed into law, which set forth the New Jersey Legislature's findings that energy efficiency, conservation, and renewable energy measures must be essential elements of the State's energy future, and that greater reliance on energy efficiency, conservation, and renewables will provide significant benefits to the citizens of New Jersey. The Legislature also found and declared that public utility involvement and competition in the conservation, energy efficiency, and renewable energy industries are essential to maximize efficiencies.

13. Pursuant to Section 13 of the Act, an electric or gas public utility may, among other things, provide and invest in energy efficiency, conservation, and renewable energy programs on a regulated basis. See N.J.S.A. 48:3-98.1(a).<sup>1</sup> The Act also states that electric and gas public utility investment in energy efficiency, conservation, and renewable energy programs may be eligible for rate treatment approved by the Board, including a return on equity, or other incentives or rate mechanisms that decouple utility revenue from sales of electricity and gas. See N.J.S.A. 48:3-98.1(b). Ratemaking treatment may include placing appropriate technology and program cost investments in the utility's rate base, or recovering the utility's technology and program costs through another ratemaking methodology approved by the Board. Id.

14. An electric or gas public utility seeking cost recovery for any energy efficiency, conservation, or renewable energy program pursuant to N.J.S.A. 48:3-98.1 must file a petition with the Board. See N.J.S.A. 48:3-98.1(b). In determining the recovery of program costs, the Board "may take into account the potential for job creation from such programs, the effect on competition for such programs, existing market barriers, environmental benefits, and the availability of such programs in the marketplace." Id.

15. Within 120 days after enactment of the Act, the Board was required to issue an order that allows electric and/or gas public utilities to offer energy efficiency, conservation, and renewable energy programs on a regulated basis. On May 12, 2008, the Board issued such an Order pursuant to N.J.S.A. 48:3-98.1(c). See BPU Order Pursuant to N.J.S.A. 48:3-98.1(c) ("120-Day Order"), BPU Docket No. EO08030164.

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<sup>1</sup> Section 13 of the Act has been codified at N.J.S.A. 48:3-98.1.

16. As set forth in the 120-Day Order, the Board has allowed electric public utilities and gas public utilities to offer energy efficiency, conservation, and renewable energy programs on a regulated basis, provided that the utility files a petition and obtains Board approval for such programs and the mechanism for program cost recovery. See 120-Day Order, at p. 6. The Board also established that certain information be filed with the Petition. This requested information is set forth in the minimum filing requirements attached to the 120-Day Order as Appendix A (“Minimum Filing Requirements”).

17. The 120-Day Order also requires a utility contemplating filing a petition for energy efficiency, conservation, and/or renewable energy programs and related cost recovery mechanisms, to meet with BPU Staff and the New Jersey Division of Rate Counsel (“Rate Counsel”) at least 30-days prior to filing its petition to discuss the nature of the program and program cost recovery mechanism to be proposed in the petition, as well as the Minimum Filing Requirements to be submitted along with the petition. See 120-Day Order, at p. 6.

18. The BPU approved PSE&G’s original Solar 4 All Program (“Original Program”) on August 8, 2009. The Original Program included the installation of 10 MW of solar on brownfields/grayfields, which the Board noted “have significant untapped potential for the development of solar electric generation.”<sup>2</sup>

19. On December 6, 2011, Governor Christie released New Jersey’s Energy Master Plan (“EMP”), the blueprint for future development of energy, and solar energy specifically, for the State. The EMP contained several recommendations on solar energy, designed to ensure the

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<sup>2</sup> In the Matter of Petition of Public Service Electric and Gas Company for Approval of a Solar Generation Investment Program and Associated Cost Recovery Mechanism, Docket No. EO09020125, Order Approving Stipulation (NJBPU August 8, 2009), p.10.

continued growth of the solar market in New Jersey in the most cost effective manner possible. The EMP specifically emphasized that properties that cannot be developed for general commercial or residential purposes, such as brownfields and landfills, are well-suited for the development of large grid-connected solar generation.<sup>3</sup>

20. On July 23, 2012, Governor Christie signed Senate Bill 1925, enacted as P.L. 2012, c. 24 (the “Solar Energy Act of 2012” or “Solar Act”). The Governor stated that the bill will strengthen and encourage the continued growth of New Jersey's solar industry, while protecting ratepayers from increased costs: “The bill I am signing today...will help us remain a national leader in the solar energy industry as we continue to promote innovative approaches to solar development, like developing landfills and other unusable lands and transforming them into sources of usable clean energy, all while holding down costs for families and businesses.”<sup>4</sup>

21. Particularly relevant to this filing, the Solar Act provides that all solar systems owned or operated by an electric utility and approved by the Board pursuant to N.J.S.A. 48:3-98.1 shall be deemed “connected to the distribution system” for purposes of issuance of Solar Renewable Energy Certificates (“SRECs”). See N.J.S.A. 48:3-51 (definition of “Connected to the distribution system”). The Solar Act also established a priority for the development of grid supplied solar on landfill, brownfield and areas of historic fill, which the Extension II Program will target. See N.J.S.A. 48:3-87(t).

22. In May 2013, the BPU approved the Solar 4 All Extension Program, which focused on developing 42 MW of grid connected solar capacity on landfills and brownfields.

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<sup>3</sup> 2011 New Jersey Energy Master Plan, p. 107.

<sup>4</sup> Office of the Governor, “Governor Christie Builds on Record of Growing Renewable Energy Sources with Action to Strengthen Solar Market,” Trenton, July 23, 2012.

The BPU again recognized that landfills and brownfields offer prime opportunities for large-scale solar development that benefits New Jersey and PSE&G customers. Thus far, PSE&G has developed four landfill/brownfield sites through the Extension Program: Kinsley Landfill (11.2 MW), Parklands Landfill (10.1 MW), and L&D Landfill (12.9 MW) are in-service, and the ILR Landfill (7.8 MW) will be in-service before the end of 2016. Inclusive of the original Solar 4 All Program, PSE&G has a 52 MW portfolio of landfill and brownfield solar systems under management. PSE&G has successfully converted these properties into a productive asset that adds to New Jersey's inventory of renewable energy resources without reducing the State's open green space.

23. In December of 2015, the Christie Administration issued its update to the 2011 EMP, which reinforced the State's continuing policy of encouraging the placement of solar projects on landfills and brownfields, affirming PSE&G's successful implementation of the Solar 4 All programs:

The existing goals to promote solar projects that provide both economic and environmental benefits are sound and should be continued. The State should continue its policy of discouraging the development of solar farms on farmland and undeveloped open spaces, such as forests, and encouraging their placement on or above impervious surfaces or on landfills, brownfields or areas of historic fill.<sup>5</sup>

24. In light of the clear message in the EMP placing continued focus on development of solar facilities on landfills and brownfields, PSE&G's proven experience with the Original Program and Extension Program, and the Company's identification of additional landfill sites suitable for solar development, PSE&G has developed the Solar 4 All Extension II Program.

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<sup>5</sup> New Jersey Energy Master Plan Update, p. 29.

The Extension II Program will support the State in meeting its land use and renewable policy objectives by directing solar investment toward brownfields and landfills, where there are additional societal benefits from such investment. On January 12, 2016, PSE&G held a pre-filing meeting at the Board's offices in Trenton, New Jersey during which the Company set forth its intention to seek a continuation of its landfill/brownfield segment of the current Extension Program.

25. Attached hereto, and incorporated herein by reference, is Appendix A, which identifies where in the instant filing all of the applicable Minimum Filing Requirements are set forth.

26. PSE&G hereby files the within petition seeking to expand the development of solar installations on landfills and brownfields in the State of New Jersey through the Extension II Program. PSE&G respectfully submits that the Extension II Program is substantially similar to the Extension Program and that PSE&G has committed significant effort and resources to comply with the Board's Minimum Filing Requirements. PSE&G hereby requests that Board Staff find this filing to be administratively complete as expeditiously as possible in accordance with the 120-Day Order.

**PSE&G'S SOLAR 4 ALL EXTENSION II PROGRAM**

27. PSE&G will invest in, own, and operate solar systems on properties that cannot be productively utilized because of past use or current site conditions. These sites include sanitary landfill facilities, or portions of sanitary landfill facilities, for which performance is complete with respect to all activities associated with the design, installation, purchase, or

construction of all measures, structures, or equipment required by the Department of Environmental Protection; and/or any former or current commercial or industrial sites that are currently vacant or underutilized and on which there has been, or there is suspected to have been, a discharge of contaminant (“brownfields”). The key elements of the proposed Extension II Program are virtually identical to the landfill/brownfield segment of the Extension Program and are set forth in the direct testimony of Todd W. Hranicka, submitted herewith as Attachment A.

Dispute Resolution Mechanism

28. PSE&G proposes that any disputes related to the Program be resolved through the Board’s established customer complaint process. The dispute resolution process is described further in the testimony of Mr. Hranicka.

**COMPARISON WITH OTHER PROGRAMS AND CONSISTENCY WITH STATE ENERGY, ENVIRONMENTAL, AND ECONOMIC POLICIES**

29. The Extension II Program is substantially similar to the Extension Program. Like PSE&G’s Extension Program, the Extension II Program focuses on grid-connected, landfill/brownfield sited solar systems.

30. This proposal directly supports the State’s solar energy initiatives, including the December 2015 update to the New Jersey Energy Master Plan. The Program, when fully deployed, will result in 100 MW of additional solar generating capacity in New Jersey. The Extension II Program will create significant environmental benefits by providing emission-free solar energy, thereby displacing electricity generated through the combustion of fossil fuels and supporting the greenhouse gas-reduction goals of the Global Warming Response Act (“GWRA”),

N.J.S.A. 26:2C-37, et seq., and the New Jersey Department of Environmental Protection's ("NJDEP") GWRA Recommendation Report.

31. The Program will support the State's current model for fostering a solar energy industry in New Jersey. The State's model has been built around developing a market for SRECs. Under the Extension II Program, PSE&G will continue to be an investor/owner in solar energy projects that are developed using the SREC model. PSE&G will put its patient capital to work to support continued increases in solar generation. Mr. Hranicka's testimony discusses in greater detail the ways in which the Program will complement the State's renewable energy policies.

32. The Program will also have a positive impact on New Jersey's economy and its solar industry in particular. The Program supports growth in the solar industry by providing needed capital to build landfill/brownfield solar capacity, and creating and maintaining new, green jobs.

33. The Extension II Program works hand in glove with the Solar Act and the New Jersey Energy Master Plan to support State energy policy.

### **COST RECOVERY PROPOSAL**

34. PSE&G requests that the Board grant approval of recovery of all Extension II Program costs. PSE&G proposes to recover all Program costs via a separate component of the electric Green Program Recovery Charge mechanism approved by the Board for PSE&G's other Solar 4 All programs. The GPRC will continue to be reviewed and modified in an annual filing that PSE&G will make with the Board. PSE&G's proposed cost recovery mechanism for the Program,

including the estimated rate impacts on customers and proposed initial rates, is fully-described in the pre-filed testimony and schedules of Stephen Swetz (Attachment B).

35. Similar to the Extension Program, PSE&G proposes to recover all Extension II Program costs through the SGIEIIPC of PSE&G's GPRC. The testimony of Company witness Paul R. Moul, included as Attachment D to this Petition, demonstrates that 11.00% is the appropriate ROE for this Program and all the Company's operations. At this time, in an effort to facilitate a timely resolution of this important initiative and thereby continue the work and investment in these landfill/brownfield solar projects, the Company limits its request to the 9.75% ROE recently approved for the Company's infrastructure programs. As a result, the Company is proposing to earn a return on its net investment in the Program based on the Weighted Average Cost of Capital ("WACC") of 7.12%. The proposed pre-tax WACC is 10.57% as discussed in more detail in the testimony and attendant schedules of Stephen Swetz, attached to the Petition as Attachment B. In addition, a complete discussion of the cost recovery mechanism is provided in the following sections of this Petition and in the pre-filed testimony and schedules of Mr. Swetz.

36. Ms. Donna M. Powell testifies to the accounting treatment the Company will use for the Program. She also supports certain financial statements that are required under the Board's Minimum Filing Requirements. Ms. Powell's pre-filed testimony is attached hereto as Attachment C.

37. PSE&G also hereby files Attachments E through H. Attachment E is a draft Form of Notice of Filing. Concurrent with the filing of this Petition with the BPU, this Notice of Filing will be served on the County Executives and Clerks of all Municipalities within the Company's electric service territory. Contained in Attachment F is the draft Form of Notice of Filing and of Public Hearings, which sets forth the requested changes to electric rates and will be placed in

newspapers having a circulation within the Company's electric service territory upon receipt, scheduling and publication of public hearing dates. Two public hearings will be held in three geographic areas within the Company's service territory, i.e., Northern, Central, and Southern. This Notice of Filing and Public Hearings will be served on the County Executives and Clerks of all Municipalities within the Company's electric service territory upon publication of public hearing dates. Proposed tariff sheets (clean and red-lined) are being provided as Attachment G. In addition, PSE&G is providing a residential rate impact summary, provided herewith as Attachment H. Two copies of the Petition and supporting attachments will be served upon the Department of Law and Public Safety, 124 Halsey Street, P.O. Box 45029, Newark, New Jersey 07102 and upon the Director, Division of Rate Counsel, 140 East Front Street, 4<sup>th</sup> Floor, P.O. Box 003, Trenton, New Jersey 08625. A copy will also be e-mailed to the persons identified on the service list provided with this filing.

38. PSE&G requests that the proposed rates to recover all of the Program costs be approved by the Board, along with the Program and cost recovery mechanism proposed in this filing. PSE&G also requests that the Board authorize the Company to implement the proposed rates contemporaneously with the Board's approval of this Petition. Once the proposed Solar Generation Investment Extension II Program Component of the GPRC has been approved it will operate much like the other components of the GPRC, subject to deferred accounting and periodic true-up through filings with the Board.

**REQUEST FOR REVIEW AND APPROVAL**

39. PSE&G requests review and approval of this Petition pursuant to the time frame set forth in N.J.S.A. 48:3-98.1 et seq.

40. PSE&G respectfully requests that the BPU retain jurisdiction of this matter and not transfer the filing to the Office of Administrative Law. Due to the substantial similarity between the Extension II Program and the Extension Program, PSE&G believes that evidentiary hearings are not required for the Board to approve this Program and the proposed cost recovery mechanism. PSE&G is confident that any issues other parties raise can be resolved through settlement or through written comments filed with the Board prior to its decision.

**COMMUNICATIONS**

41. Communications and correspondence related to the Petition should be sent as follows:

Matthew M. Weissman  
PSEG Services Corporation  
80 Park Plaza, T5  
P. O. Box 570  
Newark, New Jersey 07101  
Phone: (973) 430-7052  
Fax: (973) 430-5983  
[matthew.weissman@pseg.com](mailto:matthew.weissman@pseg.com)

Sheree L. Kelly  
PSEG Services Corporation  
80 Park Plaza, T5  
P. O. Box 570  
Newark, New Jersey 07101  
Phone: (973) 430-6468  
Fax: (973) 430-5983  
[sheree.kelly@pseg.com](mailto:sheree.kelly@pseg.com)

Constance Lembo  
PSEG Services Corporation  
80 Park Plaza, T5  
P. O. Box 570  
Newark, New Jersey 07101  
Phone: (973) 430-6273  
Fax: (973) 430-5983  
[constance.lembo@pseg.com](mailto:constance.lembo@pseg.com)

**CONCLUSION**

For all the foregoing reasons, PSE&G respectfully requests that the Board retain jurisdiction of this matter and issue an Order approving this Petition, specifically finding that:

1. The Extension II Program is in the public interest and PSE&G is authorized to implement and administer the Extension II Program as a regulated utility service under the terms set forth in this Petition and accompanying Attachments;
2. The cost recovery mechanism proposed herein is just and reasonable, and PSE&G is authorized to recover all costs requested herein associated with the Program, which will be recovered through a separate component of the electric GPRC, which will be updated annually; and
3. The proposed rates and charges, as set forth herein, are just and reasonable and PSE&G is authorized to implement the rates proposed herein.

Respectfully submitted,

PUBLIC SERVICE ELECTRIC AND GAS COMPANY



By: \_\_\_\_\_

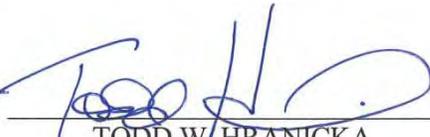
Matthew M. Weissman  
General Regulatory Counsel – Rates

DATED: May 10, 2016  
Newark, New Jersey

STATE OF NEW JERSEY    )  
  :  
COUNTY OF ESSEX        )

Todd W. Hranicka, of full age, being duly sworn according to law, on his oath deposes and says:

1. I am the Director of Solar Energy, Public Service Electric and Gas Company, the Petitioner in the foregoing Petition.
2. I have read the annexed Petition, and the matters and things contained therein are true to the best of my knowledge and belief.
3. Copies of the Petition have been delivered and emailed to the NJBPU, the Department of Law & Public Safety and the Division of Rate Counsel.

BY  \_\_\_\_\_  
TODD W. HRANICKA

Sworn and subscribed to before me  
this 10<sup>th</sup> day of May 2016



CONSTANCE E. LEMBO  
Notary Public of New Jersey  
Commission Expires 10/18/2016

<b>IN THE MATTER OF THE PETITION OF PUBLIC SERVICE ELECTRIC AND GAS COMPANY FOR APPROVAL OF A SOLAR4AI EXTENSION II PROGRAM AND AN ASSOCIATED COST RECOVERY MECHANISM</b>	
<b>MIMIMUM FILING REQUIREMENTS FOR PETITIONS UNDER <u>N.J.S.A. 48:3-98.1</u></b>	<b>LOCATION IN FILING</b>
<b>I. General Filing Requirements</b>	
a. The utility shall provide with all filings, information and data pertaining to the specific program proposed, as set forth in applicable sections of <u>N.J.A.C. 14:1-5.11</u> and <u>N.J.A.C. 14:1-5.12</u> .	Information and data pertaining to the specific program proposed, as set forth in the applicable sections of <u>N.J.A.C. 14:1-5.11</u> and <u>N.J.A.C. 14:1-5.12</u> , is included in the schedules to Attachment B to the petition (Testimony of Stephen Swetz) and Attachment C to the petition (Testimony of Donna M. Powell). Other information required by these regulations will be provided in Attachments E, F, G and H.
b. All filings shall contain information and financial statements for the proposed program in accordance with the applicable Uniform System of Accounts that is set forth in <u>N.J.A.C. 14:1-5.12</u> . The utility shall provide the Accounts and Account numbers that will be utilized in booking the revenues, costs, expenses and assets pertaining to each proposed program so that they can be properly separated and allocated from other regulated and/or other programs.	Attachment B, Schedule SS-S4AEII-8 (Testimony of Stephen Swetz), Attachment C (Testimony of Donna M. Powell), Schedules DMP-S4AEII-2 thru Schedule-S4AEII-6.
c. The utility shall provide supporting explanations, assumptions, calculations, and work papers for each proposed program and cost recovery mechanism petition filed under <u>N.J.S.A. 48:3-98.1</u> and for all qualitative and quantitative analyses therein. The utility shall provide electronic copies of all materials and supporting schedules, with all inputs and formulae intact.	PSE&G provides such data in its Petition, Attachment A (Testimony of Todd W. Hranicka), Attachment B (Testimony of Stephen Swetz) and their supporting schedules and work papers. PSE&G is providing copies of its Petition, supporting schedules and work papers in both hard copy and electronic format, where applicable.
d. The utility shall file testimony supporting its petition.	Please refer to the testimony filed in support of PSE&G's Petition Attachments A, B, C, and D.
e. For any small scale or pilot program, the utility shall only be subject to the requirements in this Section and Sections II, III, and IV. The utility shall, however, provide its estimate of costs and a list of data it intends	This filing qualifies as a small scale program based upon the projected rate impacts; however, PSE&G is providing the information required in Attachment A (Testimony of Todd W.

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<p>to collect in a subsequent review of the benefits of the program. Information in Section V may be required for pilot and small programs if such programs are particularly large or complex. A “small scale” project is defined as one that would result in either a rate increase of less than a half of one percent of the average residential customer’s bill or an additional annual total revenue requirement of less than \$5 million. A pilot program shall be no longer than three years, but can be extended under appropriate circumstances.</p>	Hranicka).
<p>f. If the utility is filing for an increase in rates, charges etc., or for approval of a program which may increase rates/charges to ratepayers in the future, the utility shall include a draft public notice with the petition and proposed publication dates.</p>	<p>PSE&amp;G will hold three public hearings in its service territory; North, Central and Southern regions; a draft public notice is being provided as Attachment F to the Petition.</p>
<b>II. Program Description</b>	
<p>a. The utility shall provide a detailed description of each proposed program for which the utility seeks approval.</p>	<p>Petition, Attachment A (Testimony of Todd W. Hranicka), pp.11-16 and Exhibit C (Testimony of Todd Hranicka, Program Rules).</p>
<p>b. The utility shall provide a detailed explanation of the differences and similarities between each proposed program and existing and/or prior programs offered by the New Jersey Clean Energy Program, or the utility.</p>	<p>Petition, Attachment A (Testimony of Todd W. Hranicka), pp. 12-17.</p>
<p>c. The utility shall provide a description of how the proposed program will complement, and impact existing programs being offered by the utility and the New Jersey Clean Energy Program with all supporting documentation.</p>	<p>Petition, Attachment A (Testimony of Todd W. Hranicka), pp. 12-17.</p>
<p>d. The utility shall provide a detailed description of how the proposed program is consistent with and/or different from other utility programs or pilots in place or proposed with all supporting documentation.</p>	<p>Petition, Attachment A (Testimony of Todd W. Hranicka), pp. 12-16.</p>

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<b>MIMIMUM FILING REQUIREMENTS FOR PETITIONS UNDER N.J.S.A. 48:3-98.1</b>	<b>LOCATION IN FILING</b>
<p>e. The utility shall provide a detailed description of how the proposed program comports with New Jersey State policy as reflected in reports, including the New Jersey Energy Master Plan, or, pending issuance of the final Energy Master Plan, the draft Energy Master Plan, and the greenhouse gas emissions reports to be issued by the New Jersey Department of Environmental Protection pursuant to N.J.S.A. 26:2C-42(b) and (c) and N.J.S.A. 26:2C-43 of the Global Warming Response Act, N.J.S.A. 26:2C-37 et seq.</p>	<p>Petition, pp. 5-16, Attachment A (Testimony of Todd W. Hranicka), pp. 2, 6-8.</p>
<p>f. The utility shall provide the features and benefits for each proposed program including the following:</p> <ul style="list-style-type: none"> <li>i. the target market and customer eligibility if incentives are to be offered;</li> <li>ii. the program offering and customer incentives;</li> <li>iii. the quality control method including inspection;</li> <li>iv. program administration; and</li> <li>v. program delivery mechanisms.</li> </ul>	<p>Attachment A (Testimony of Todd W. Hranicka) and Exhibit C (Program Rules).</p>
<p>g. The utility shall provide the criteria upon which it chose the program.</p>	<p>Attachment A (Testimony of Todd W. Hranicka)</p>
<p>h. The utility shall provide the estimated program costs by the following categories: administrative (all utility costs), marketing/sales, training, rebates/incentives including inspections and quality control, program implementation (all contract costs) and evaluation and other.</p>	<p>Attachment A (Testimony of Todd W. Hranicka), Schedule TWH-S4AEII-2</p>
<p>i. The utility shall provide the extent to which the utility intends to utilize employees, contractors or both to deliver the program and, to the extent applicable, the criteria the utility will use for contractor selection.</p>	<p>Attachment A (Testimony of Todd W. Hranicka), p. 13 and Exhibit C (Program Rules).</p>

<b>IN THE MATTER OF THE PETITION OF PUBLIC SERVICE ELECTRIC AND GAS COMPANY FOR APPROVAL OF A SOLAR4AII EXTENSION II PROGRAM AND AN ASSOCIATED COST RECOVERY MECHANISM</b>	
<b>MIMIMUM FILING REQUIREMENTS FOR PETITIONS UNDER N.J.S.A. 48:3-98.1</b>	<b>LOCATION IN FILING</b>
j. In the event the program contemplates an agreement between the utility and its contractors and/or the utility and its ratepayers, copies of the proposed standard contract or agreement between the ratepayer and the utility, the contractor and the utility, and/or the contractor and the ratepayer shall be provided.	Attachment A (Testimony of Todd W. Hranicka), (Exhibit A and Exhibit B).
k. The utility shall provide a detailed description of the process for resolving any customer complaints related to these programs.	Attachment A (Testimony of Todd W. Hranicka), pp. 17-18, and Schedule TWH-S4AEII-3.
l. The utility shall describe the program goals including number of participants on an annual basis and the energy savings, renewable energy generation and resource savings, both projected annually and over the life of the measures.	Attachment A (Testimony of Todd W. Hranicka), pp. 6-8, 15-16.
m. Marketing – The utility shall provide the following: a description of where and how the proposed program/project will be marketed or promoted throughout the demographic segments of the utility’s customer base including an explanation of how prices and the service for each proposed program/project will be conveyed to customers.	Attachment A (Testimony of Todd W. Hranicka), Exhibit C (Program Rules).

<b>IN THE MATTER OF THE PETITION OF PUBLIC SERVICE ELECTRIC AND GAS COMPANY FOR APPROVAL OF A SOLAR4ALL EXTENSION II PROGRAM AND AN ASSOCIATED COST RECOVERY MECHANISM</b>	
<b>MIMIMUM FILING REQUIREMENTS FOR PETITIONS UNDER N.J.S.A. 48:3-98.1</b>	<b>LOCATION IN FILING</b>
<b>III. Additional Required Information</b>	
<p>a. The utility shall describe whether the proposed programs will generate incremental activity in the energy efficiency/conservation/renewable energy marketplace and what, if any, impact on competition may be created, including any impact on employment, economic development and the development of new business with all supporting documentation. This shall include a breakdown of the impact on the employment within this marketplace as follows: marketing/sales, training, program implementation, installation, equipment, manufacturing and evaluation and other applicable markets. With respect to the impact on competition the analysis should include the competition between utilities and other entities already currently delivering the service in the market or new markets that may be created.</p>	<p>Attachment A (Testimony of Todd W. Hranicka), p. 16.</p>
<p>b. The utility shall provide a description of any known market barriers that may impact the program and address the potential impact on such known market barriers for each proposed program with all supporting documentation. This analysis shall include barriers across the various markets including residential (both single and multi-family), commercial and industrial (both privately owned and leased buildings), as well as between small, medium and large commercial and industrial markets. This should include both new development and retrofit or replacement upgrades across the market sectors.</p>	<p>Petition, Attachment A (Testimony of Todd W. Hranicka) p. 16, Exhibit C (Program Rules).</p>
<p>c. The utility shall provide a qualitative/quantitative description of any anticipated environmental benefits associated with the proposed program and a quantitative estimate of such benefits for the program overall and for each participant in the program with all supporting documentation. This shall include an estimate of the energy saved in</p>	<p>Petition p. 15, Attachment A (Testimony of Todd W. Hranicka), pp. 10-11.</p>

<b>IN THE MATTER OF THE PETITION OF PUBLIC SERVICE ELECTRIC AND GAS COMPANY FOR APPROVAL OF A SOLAR4ALL EXTENSION II PROGRAM AND AN ASSOCIATED COST RECOVERY MECHANISM</b>	
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kWh and/or therms and the avoided air emissions, wastewater discharges, waste generation and water use or other saved or avoided resources.	
d. To the extent known, the utility shall identify whether there are similar programs available in the existing marketplace and provide supporting documentation if applicable. This shall include those programs that provide other societal benefits to other under-served markets. This should include an analysis of the services already provided in the market place, and the level of competition.	Attachment A (Testimony of Todd W. Hranicka) p.16.
e. The utility shall provide an analysis of the benefits or impacts in regard to Smart Growth.	Not applicable.
f. The utility shall propose the method for treatment of Renewable Energy Certificates (“REC”) including solar RECs or any other certificate developed by the Board of Public Utilities, including Greenhouse Gas Emissions Portfolio and Energy Efficiency Portfolio Standards including ownership, and use of the certificate revenue stream(s).	Attachment A (Testimony of Todd W. Hranicka), p.4, Attachment B (Testimony of Stephen Swetz) pp.5-6.
g. The utility shall propose the method for treatment of any air emission credits and offsets, including Regional Greenhouse Gas Initiative carbon dioxide allowances and offsets including ownership, and use of the certificate revenue stream(s).	Attachment A (Testimony of Todd W. Hranicka) pp.10-11, Attachment B (Testimony of Stephen Swetz) pp. 5-6.
h. The utility shall analyze the proposed quantity and expected prices for any REC, solar REC, air emission credits, offsets or allowances or other certificates to the extent possible.	Petition, Attachment A (Testimony of Todd W. Hranicka), Attachment B (Testimony of Stephen Swetz) pp. 5-6.
<b>IV. Cost Recovery Mechanism</b>	
a. The utility shall provide appropriate financial data for the proposed program, including estimated revenues, expenses and capitalized investments, for each of the first three years of operations and at the	PSE&G provides appropriate financial data for the proposed program in Attachment B (Testimony and Schedules of Stephen Swetz), Attachment C (Testimony and Schedules

<b>IN THE MATTER OF THE PETITION OF PUBLIC SERVICE ELECTRIC AND GAS COMPANY FOR APPROVAL OF A SOLAR4AII EXTENSION II PROGRAM AND AN ASSOCIATED COST RECOVERY MECHANISM</b>	
<b>MIMIMUM FILING REQUIREMENTS FOR PETITIONS UNDER <u>N.J.S.A. 48:3-98.1</u></b>	<b>LOCATION IN FILING</b>
<p>beginning and end of each year of said three-year period. The utility shall include pro forma income statements for the proposed program, for each of the first three years of operations and actual or estimated balance sheets as at the beginning and end of each years of said three year period.</p>	<p>of Donna M. Powell).</p>
<p>b. The utility shall provide detailed spreadsheets of the accounting treatment of the cost recovery including describing how costs will be amortized, which accounts will be debited or credited each month, and how the costs will flow through the proposed method of recovery of program costs.</p>	<p>Attachment B (Testimony of Stephen Swetz), and Attachment C (Testimony of Donna M. Powell).</p>
<p>c. The utility shall provide a detailed explanation, with all supporting documentation, of the recovery mechanism it proposes to utilize for cost recovery of the proposed program, including proposed recovery through the Societal Benefits Charge, a separate clause established for these programs, base rate revenue requirements, government funding reimbursement, retail margin, and/or other.</p>	<p>Attachment B (Testimony of Stephen Swetz).</p>
<p>d. The utility’s petition for approval, including proposed tariff sheets and other required information, shall be verified as to its accuracy and shall be accompanied by a certification of service demonstrating that the petition was served on the Department of the Public Advocate, Division of Rate Counsel simultaneous to its submission to the Board.</p>	<p>PSE&amp;G’s Petition is verified as to its accuracy, and PSE&amp;G will serve a copy of the filing on the Department of Public Advocate, Division of Rate Counsel; Attachment G (Tariff Sheets).</p>
<p>e. The utility shall provide an annual rate impact summary by year for the proposed program, and an annual cumulative rate impact summary for all approved and proposed programs showing the impact of individual programs as well as the cumulative impact of all programs upon each customer class of implementing each program and all approved and proposed programs based upon a revenue requirement analysis that identifies all estimated program costs and revenues for each proposed</p>	<p>Attachment B (Testimony of Stephen Swetz) Schedule SS-S4AEII-5 and Schedule SS-S4AEII-6.</p>

<b>IN THE MATTER OF THE PETITION OF PUBLIC SERVICE ELECTRIC AND GAS COMPANY FOR APPROVAL OF A SOLAR4AI EXTENSION II PROGRAM AND AN ASSOCIATED COST RECOVERY MECHANISM</b>	
<b>MIMIMUM FILING REQUIREMENTS FOR PETITIONS UNDER <u>N.J.S.A. 48:3-98.1</u></b>	<b>LOCATION IN FILING</b>
<p>program on an annual basis. The utility shall also provide an annual bill impact summary by year for each program, and an annual cumulative bill impact summary by year for all approved and proposed programs showing bill impacts on a typical customer for each class.</p>	
<p>f. The utility shall provide, with supporting documentation, a detailed breakdown of the total costs for the proposed program, identified by cost segment (capitalized costs, operating expense, administrative expense, etc.). This shall also include a detailed analysis and breakdown and separation of the embedded and incremental costs that will be incurred to provide the services under the proposed program with all supporting documentation.</p>	<p>Petition, Attachment A (Testimony of Todd W. Hranicka) and Attachment B (Testimony of Stephen Swetz) Schedules SS-S4AEII-3 to SS-S4AEII-3a.</p>
<p>g. The utility shall provide a detailed revenue requirement analysis that clearly identifies all estimated program costs and revenues for the proposed program on an annual basis, including effects upon rate base and pro forma income calculations.</p>	<p>Attachment B (Testimony of Stephen Swetz), Schedules SS-S4AEII-2 to SS-S4AEII-8 and workpapers.</p>
<p>h. The utility shall provide, with supporting documentation: (i) a calculation of its current capital structure as well as its calculation of the capital structure approved by the Board in its most recent electric and/or gas base rate cases, and (ii) a statement as to its allowed overall rate of return approved by the Board in its most recent electric and/or gas base rate cases.</p>	<p>Attachment B (Testimony of Stephen Swetz).</p>
<p>i. If the utility is seeking carrying costs for a proposed program, the filing shall include a description of the methodology, capital structure, and capital cost rates used by the utility.</p>	<p>Attachment B (Testimony of Stephen Swetz) Schedule SS-S4AEII-2 and Schedule SS-S4AEII-7.</p>
<p>j. A utility seeking incentives or rate mechanism that decouples utility revenues from sales, shall provide all supporting justification, and rationale for incentives, along with supporting documentation, assumptions and calculations.</p>	<p>Not applicable.</p>

<b>IN THE MATTER OF THE PETITION OF                      PUBLIC SERVICE ELECTRIC AND GAS                      COMPANY FOR APPROVAL OF A SOLAR4ALL EXTENSION II                      PROGRAM AND AN                      ASSOCIATED COST RECOVERY MECHANISM</b>	
<b>MIMIMUM FILING REQUIREMENTS                      FOR PETITIONS UNDER N.J.S.A. 48:3-98.1</b>	<b>LOCATION                      IN FILING</b>
<b>V. Cost/Benefit Analysis</b>	
a. The utility shall provide a detailed analysis with supporting documentation of the net benefits associated with the proposed program, including, if appropriate, a comprehensive and detailed avoided cost savings study with supporting documentation. The value of the avoided environmental impacts and the environmental benefits and the value of any avoided or deferred energy infrastructure should be stated separately.	Not applicable.
b. The utility shall calculate a cost/benefit analysis utilizing the Total Resource Cost (“TRC”) test that assesses all program costs and benefits from a societal perspective. The utility may also provide any cost benefit analysis that it believes appropriate with supporting rationales and documentation.	Not applicable.
c. The utility shall quantify all direct and indirect benefits as well as provide projected costs resulting from a proposed program that is subject to a cost/benefit test.	Not applicable.
d. Renewable energy programs shall not be subject to a cost/benefit test but the utility must quantify all direct and indirect benefits resulting from such a proposed program as well as provide the projected costs. The utility must also demonstrate how such a proposed program will support energy and environmental statewide planning objectives, such as attainment of the Renewable Portfolio Standard and any emission requirements.	Not applicable.
e. The utility must demonstrate for the proposed program that it results in a positive benefit/cost ratio, or, if the utility cannot make such a demonstration, it must provide the rationale for why the proposed program should be approved.	Not applicable.

**IN THE MATTER OF THE PETITION OF  
PUBLIC SERVICE ELECTRIC AND GAS  
COMPANY FOR APPROVAL OF A SOLAR4ALL EXTENSION II  
PROGRAM AND AN  
ASSOCIATED COST RECOVERY MECHANISM**

<b>MIMIMUM FILING REQUIREMENTS FOR PETITIONS UNDER N.J.S.A. 48:3-98.1</b>	<b>LOCATION IN FILING</b>
<p>f. The level of energy and capacity savings utilized in these calculations shall be based upon the most recent protocols approved by the Board of Public Utilities to measure energy savings for the New Jersey Clean Energy Program. In the event no such protocols exist, or to the extent that a protocol does not exist for a filed program, the utility must submit a measurement protocol for the program or contemplated measure for approval by the Board.</p>	<p>Not applicable.</p>
<p>g. The utility shall also quantify and deduct from the energy and capacity savings any free rider effects and the business as usual benefits from homeowners and businesses installing Energy Efficiency or Renewable Energy without the N.J.S.A. 48:3-98.1 benefits or incentives.</p>	<p>Not applicable.</p>

**ATTACHMENT A**

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DIRECT TESTIMONY  
OF  
TODD W. HRANICKA**

1  
2  
3  
4

5 **Q. Please state your name and professional title.**

6 A. My name is Todd W. Hranicka and I am Director Solar Energy at Public Service  
7 Electric and Gas Company (“PSE&G,” the “Company”). My credentials are set forth  
8 in the attached Schedule TWH-S4AEII-1.

9 **I. SCOPE OF TESTIMONY**

10 **Q. Please summarize your testimony.**

11 A. I am testifying in support of PSE&G’s proposed Solar 4 All<sup>®</sup> Extension II Program  
12 (“Extension II Program” or the “Program”). PSE&G is seeking to extend the Solar 4  
13 All Extension Program (“Extension Program”) that the Board of Public Utilities  
14 (“Board” or “BPU”) approved on May 23, 2013 in Docket No. EO12080721. The  
15 Extension II Program will continue the current Extension Program by adding 100  
16 MW-dc of solar capacity to New Jersey’s renewable portfolio over four years.<sup>1</sup> The  
17 Extension II Program will build on the successful landfill/brownfield segment of the  
18 Extension Program and will be comprised of a single segment that focuses only on  
19 landfills and brownfields. My testimony includes an overview of the Extension II  
20 Program and a discussion of its contribution to the State’s renewable energy,  
21 environmental and business development and employment goals, including those  
22 embodied in the State’s 2011 Energy Master Plan (“EMP”), the Solar Act of 2012

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<sup>1</sup> All references to MW capacity of solar PV systems in this testimony are in direct current (“dc”). The electricity generated by a solar system passes through an inverter and is converted to alternating current (“ac”).

1 (“Solar Act”), and the recently released update to the 2011 EMP. I will then discuss  
2 the Program in detail. My testimony also includes an outline of PSE&G’s proposed  
3 dispute resolution process for customer complaints that may arise during the  
4 Extension II Program.

5 **Q. Has PSE&G filed other testimony in this case?**

6 A. Mr. Stephen Swetz has filed testimony addressing revenue requirements and cost  
7 recovery issues. Ms. Donna M. Powell has filed testimony in support of the  
8 accounting treatment for the Extension II Program costs and revenues. Mr. Paul R.  
9 Moul has filed testimony addressing the Company’s return on equity. The  
10 testimonies are responsive to the Board’s Minimum Filing Requirements.

11 **Q. Are you filing material in addition to this written testimony?**

12 A. Yes. The electronic version of this filing contains the Extension II Program  
13 assumptions, including investments, costs, number of expected projects, market  
14 sizing and impacts. This information is located in the electronic work paper labeled  
15 WP-TWH-S4AEII-1.xlsx.

16 **II. OVERVIEW OF THE PSE&G SOLAR 4 ALL EXTENSION II PROGRAM**

17 **Q. Please describe the Solar 4 All Extension II Program.**

18 A. PSE&G proposes to extend its very successful Solar 4 All Program, wherein PSE&G  
19 invests in, owns and operates solar generating facilities, through the addition of 100  
20 MW of photovoltaic (“PV”) systems. The Extension II Program targets a single  
21 market segment, i.e., landfills and brownfields, which have been specifically  
22 identified in the 2011 EMP, its recent update, and in legislation (P.L. 2012, c. 24, or

1 the “Solar Act”). The Program focuses on projects that meet the landfill and  
2 brownfield criteria under subsection (t) of the Solar Act. In the course of  
3 implementing the Extension Program, PSE&G has identified 150 MW of additional  
4 landfill/brownfield projects, including over 20 sites that have been evaluated and  
5 deemed suitable for solar development.

6 **Q. Please summarize the construction schedule and capital expenditures.**

7 A. The expected construction schedule is designed to bring the solar projects into service  
8 over a four-year period, starting in 2018, and it is estimated that capital expenditures  
9 of \$240 million will be required to develop the full capacity over that period.  
10 Additionally, the Company is requesting approval of \$36 million for contingency and  
11 unforeseen site conditions, for a total capital amount of \$276 million.

12 **Q. Will there be operating and maintenance (“O&M”) costs as well?**

13 A. Yes. Over the first five years of the implementation/construction phase of the  
14 Program, PSE&G expects to expend approximately \$20 million for the purpose of  
15 operating and maintaining the systems placed in service. The O&M figure includes  
16 general plant upkeep and maintenance, insurance, lease payments, costs associated  
17 with program administration, and project management of the Extension II Program.  
18 The Extension II Program includes capital replacement for inverters and  
19 communication equipment over the 25-year life of the Solar Systems, plus expenses  
20 as listed above from 2022 through 2046.

1 **Q. You have mentioned the costs of the Program. Will there be benefits to**  
2 **customers as well?**

3 A. Yes, there will. There will, of course, be environmental, specifically, emissions-  
4 related, benefits that I will detail below. In addition, the costs I just identified will be  
5 offset by the sale of solar energy into the PJM wholesale energy market and the  
6 auctioning of SRECs produced by the solar systems. If PJM capacity market rules  
7 change and solar capacity once again becomes a viable capacity resource, PSE&G  
8 will also offer capacity into the auctions and credit ratepayers with the revenue  
9 produced from participation. PSE&G will flow back to ratepayers all revenues it  
10 receives from the sale of energy, capacity, SRECs, and the Federal Solar Investment  
11 Tax Credit (“ITC”) to help offset the Extension II Program’s costs.

12 **Q. For the projected revenue requirements, what was the basis of your forecast of**  
13 **wholesale energy costs and SREC prices?**

14 A. The forecast of wholesale energy costs was obtained from the most recent Center for  
15 Energy, Economic and Environmental Policy (“CEEEP”) published forecast of  
16 avoided energy costs.<sup>2</sup> The SREC price forecast was developed by first taking the  
17 average price from the three most recent SREC auctions (as of March 1, 2016) and  
18 dividing that price by the 2016 Energy Year Solar Alternate Compliance Payment  
19 (“SACP”). This resulting percentage was then applied to future Energy Years’ SACP  
20 to arrive at a forecast of SREC auction prices.

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<sup>2</sup> CEEEP, Draft Energy Efficiency Cost-Benefit Analysis Avoided Cost Assumptions, December 8, 2014.

1 **Q. Will there be benefits to municipalities and local economies as well?**

2 A. Yes, there will. PSE&G will make lease payments to host sites where PSE&G places  
3 its solar power facilities. Some of these are municipally-owned sites, and others are  
4 privately-owned. There may also be an increase in local commerce during  
5 construction of the Extension II Program projects and, if sited on municipally owned  
6 property, the projects will provide a new revenue stream for the township.

7 **Q. How have you estimated the Program costs, generally speaking?**

8 A. The estimated costs of the Extension II Program are based on PSE&G's experience in  
9 developing and constructing four landfill projects as part of the Extension Program.  
10 Kinsley Landfill (11.2 MW), Parklands Landfill (10.1 MW), and L&D Landfill (12.9  
11 MW) are in-service, and the ILR Landfill (7.8 MW) will be in-service before the end  
12 of 2016. Inclusive of the original Solar 4 All Program, PSE&G has a 52 MW  
13 portfolio of landfill and brownfield solar system sites under management.

14 **Q. Please briefly describe how the solar projects will be developed.**

15 A. PSE&G will identify potential sites, finance all projects, obtain all required permits  
16 and provide overall project and construction management. PSE&G may retain the  
17 services of an engineering firm for site assessment, development of the scope of  
18 work, permitting, proposal review, and other services. The Company intends to hire  
19 solar industry firms, through a competitive process, to provide the engineering,  
20 procurement, and construction services required to develop the projects. To the  
21 extent permitted by law, products manufactured in New Jersey and/or services

1 provided by businesses located in New Jersey may be given preference in the  
2 competitive selection process.

3 **Q. Please describe the type of interconnection the projects will utilize.**

4 A. The solar systems will be installed in various locations, will be grid-connected on the  
5 utility side of the billing meter to PSE&G's electric distribution system, and will be  
6 eligible to generate SRECs.

7 **III. THE PROGRAM WILL SUPPORT THE STATE'S RENEWABLE ENERGY,**  
8 **ECONOMIC DEVELOPMENT/EMPLOYMENT, AND ENVIRONMENTAL**  
9 **GOALS**

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10 **A. Renewable Energy**

11 **Q. Can you summarize the State of New Jersey's policy toward solar power?**

12 A. Yes, I can. New Jersey is and has for some time been a national leader in solar  
13 energy. In 2011, the Christie Administration released New Jersey's Energy Master  
14 Plan, its strategic vision for the development of energy, and renewable energy  
15 specifically, in the State over the next decade. The EMP contained several  
16 recommendations targeted to the solar energy market. On July 23, 2012, Governor  
17 Christie signed Senate Bill 1925, enacted as P.L. 2012, c. 24 (the "Solar Energy Law  
18 of 2012" or "Solar Act"). The Governor stated that the bill would strengthen and  
19 encourage the continued growth of New Jersey's solar industry, while protecting  
20 ratepayers from increased costs: "The bill I am signing today...will help us remain a  
21 national leader in the solar energy industry as we continue to promote innovative  
22 approaches to solar development, like developing landfills and other unusable lands  
23 and transforming them into sources of usable clean energy, all while holding down

1 costs for families and businesses.”<sup>3</sup> Particularly relevant to this filing, the Solar Act  
2 provides that all solar systems owned or operated by an electric utility and approved  
3 by the Board pursuant to N.J.S.A. 48:3-98.1 shall be deemed “connected to the  
4 distribution system” for purposes of the issuance of SRECs. The Solar Act also  
5 established priority for the development of grid supplied solar on landfill facilities,  
6 brownfields, and areas of historic fill, which the Extension II Program exclusively  
7 targets. In December of 2015, the Administration issued its update to the 2011 EMP  
8 in which it reinforced continued focus on solar development on landfill and  
9 brownfield sites:

10 The existing goals to promote solar projects that  
11 provide both economic and environmental benefits are  
12 sound and should be continued. The State should  
13 continue its policy of discouraging the development of  
14 solar farms on farmland and undeveloped open spaces,  
15 such as forests, and encouraging their placement on or  
16 above impervious surfaces or on landfills, brownfields  
17 or areas of historic fill.<sup>4</sup>

18  
19 The Extension II Program will continue to support the State of New Jersey in meeting  
20 its land use and renewable energy policy objectives by directing solar investment  
21 toward landfill and brownfields consistent with the Solar Act and the Energy Master  
22 Plan.

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<sup>3</sup> Office of the Governor, “Governor Christie Builds on Record of Growing Renewable Energy Sources with Action to Strengthen Solar Market,” Trenton, July 23, 2012.

<sup>4</sup> 2015 New Jersey Energy Master Plan Update, p. 29.

1 **Q. Have PSE&G's priorities been aligned with the State's priorities with respect to**  
2 **solar development?**

3 A. Absolutely. I would say that PSE&G has been the unquestioned utility leader in  
4 terms of aligning its priorities and resources with state policy regarding solar in  
5 general, and landfill solar in particular.

6 **Q. Has this commitment been particularly significant?**

7 A. Yes it has. With the exception of PSE&G's Solar 4 All programs, landfills and  
8 brownfields have generally not been the focus for solar developers, because these  
9 types of projects have greater complexity, longer development timelines, more  
10 complex permitting, and greater environmental and financial risk than other types of  
11 solar installations. PSE&G is a well-established, stable organization that can manage  
12 the relatively long time frames, capital costs, and complexity of these types of  
13 projects. The Company's successful implementation of the Solar 4 All programs  
14 proves PSE&G has a unique mix of capabilities, including expertise in project siting,  
15 permitting, development, construction and interfacing with PJM and the SREC  
16 markets. These capabilities are unmatched in the state and have supported the  
17 achievement of New Jersey's solar power goals and provided tangible benefits to our  
18 ratepayers, our employees, our shareholders, the solar industry, and the citizens of  
19 New Jersey.

1           **B.       Employment and Economic Development**

2   **Q.       Will the solar projects provide a significant number for jobs for New Jersey?**

3   A.       Based on estimates developed by the Rutgers Edward J. Bloustein School of Planning  
4           and Public Policy (“Bloustein School”) to support the EMP, the Extension II Program  
5           will require approximately 650 job-years of direct labor to complete the projects.<sup>5</sup>  
6           The jobs will be created in the manufacturing, engineering, fabrication, installation,  
7           and other sectors of the economy. Specific job types include electrical engineers,  
8           electricians, industrial machinery mechanics, welders, metal fabricators, electrical  
9           equipment assemblers, construction equipment operators, installation helpers,  
10          laborers, and construction managers. Additionally, an estimated 20 permanent jobs  
11          are expected to be created to operate and maintain the solar systems.

12                 The Company also examined job creation and economic development using  
13                 the Jobs and Economic Development Impact (“JEDI”)<sup>6</sup> model developed by the  
14                 National Renewable Energy Laboratories (“NREL”). JEDI has state-specific  
15                 “modules” that evaluate the economic impact of various renewable investments such  
16                 as solar, onshore wind, biomass and geothermal. JEDI uses Implan,<sup>7</sup> an economic  
17                 input/output model, as its base modeling platform and re-compiles various Implan  
18                 sectors in order to develop a unique customized model for each renewable investment  
19                 type.

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<sup>5</sup> Bloustein School of Public Policy, Analysis for the 2011 Draft New Jersey Energy Master Plan Update, April 12, 2011.

<sup>6</sup> [http://www.nrel.gov/analysis/jedi/about\\_jedi.html](http://www.nrel.gov/analysis/jedi/about_jedi.html).

<sup>7</sup> <http://www.implan.com>.

1           The JEDI model estimates that the Extension II Program will generate about  
2           575 full time equivalent (“FTE”) direct in-state jobs over the course of the Program.  
3           Additionally, it projects another 185 FTE jobs for supply chain related services and  
4           240 FTE jobs for induced employment such as retail, restaurants, medical service,  
5           clothing, and so on. In all, the JEDI model estimates an increase in economic output  
6           for New Jersey of about \$155 million attributable to the Program.

7           **C.     Environmental Benefits**

8           **Q.     You mentioned environmental benefits earlier; what exactly are those benefits?**

9           A.     The Extension II Program will create significant environmental benefits by providing  
10           emission-free solar energy, thereby displacing electricity generated through the  
11           combustion of fossil fuels and supporting the greenhouse gas-reduction goals of the  
12           Global Warming Response Act (“GWRA”), N.J.S.A. 26:2C-37 et seq. and the New  
13           Jersey Department of Environmental Protection’s (“NJDEP”) GWRA  
14           Recommendation Report. It is estimated that once fully built out, each year  
15           PSE&G’s Program operates it will:

- 16           •     generate enough power to supply approximately 16,790 homes;<sup>8</sup>
- 17           •     remove the emissions equivalent of 11,270 cars from the road;<sup>9</sup> and
- 18           •     displace approximately 58,930 metric tons of CO<sub>2</sub> emissions.<sup>10</sup>

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<sup>8</sup> Based on New Jersey average residential use for all housing types.

<sup>9</sup> USEPA Greenhouse Gas Equivalencies Calculator, <http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results>.

<sup>10</sup> Calculation based on DEP Emissions Reduction Factors for electric programs, from New Jersey Clean Energy Program Protocols to Measure Resource Savings (p. 10), [http://www.njcleanenergy.com/files/file/Appeals/NJ%20Protocols%20Revisions%202013%20Update\\_04-16-2014\\_clean.pdf](http://www.njcleanenergy.com/files/file/Appeals/NJ%20Protocols%20Revisions%202013%20Update_04-16-2014_clean.pdf).

1 In addition to the reduction of greenhouse gas emissions, the Program will reduce the  
2 levels of other air pollutants, including over 50 metric tons of NOx emissions and 117  
3 metric tons of SO<sub>2</sub> emissions.<sup>11</sup> Much of the NOx reductions will come during the  
4 May-September ozone season, as these systems operate for more hours and will  
5 displace fossil fueled power on hot, sunny summer days, specifically helping to  
6 reduce the formation of ozone in the State. Ozone reduction has been a specific  
7 concern of State environmental officials since northern New Jersey is designated as a  
8 moderate non-attainment area and southern New Jersey a marginal non-attainment  
9 area for the 2008 eight-hour ozone emission standard.

10 **IV. DETAILED PROGRAM DESCRIPTION**

11 **Q. Please describe how the Program will actually work.**

12 A. PSE&G will invest in, own, and operate solar systems on properties that are defined  
13 under subsection (t) of the Solar Act and that are certified pursuant to the process  
14 approved by the Board in Docket EO12090862V. These sites include (a) sanitary  
15 landfill facilities, or portions of sanitary landfill facilities, for which performance is  
16 complete with respect to all activities associated with the design, installation,  
17 purchase, or construction of all measures, structures, or equipment required by the  
18 Department of Environmental Protection; (b) any former or current commercial or  
19 industrial site that is currently vacant or underutilized and on which there has been, or  
20 there is suspected to have been, a discharge of contaminant (“brownfields”); and (c)  
21 areas containing large volumes of non-indigenous materials, where used to raise the

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<sup>11</sup> Id.

1 topographic elevation of a site, which materials were contaminated prior to  
2 emplacement but not related to the operations at the location of emplacement,  
3 including, but not limited to: construction debris, dredge spoils, incinerator residue,  
4 demolition debris, fly ash, and non-hazardous solid waste (collectively “Non-  
5 Productive Sites”).

6 PSE&G is proposing to build 100 MW of solar capacity on Non-Productive  
7 Sites and it estimates that capital expenditures of \$240 million will be required to  
8 develop the full capacity over an expected five-year period. Additionally, the  
9 Company is requesting approval of \$36 million for contingency and unforeseen site  
10 conditions for a total capital amount of \$276 million. Estimated annual Program  
11 costs, broken down into the following categories, are set forth on Schedule TWH-  
12 S4AEII-2 of my testimony: administrative, marketing, program implementation, and  
13 other, which includes rent, O&M, and insurance. Rebates/incentives and evaluation  
14 costs are not included, since these activities are not part of the Extension II Program.  
15 The costs of inspections and quality control are included in Program implementation  
16 costs.

17 **Q. Are there similarities between the Extension II Program and the Solar 4 All**  
18 **Extension Program?**

19 A. The key elements of the proposed Program are identical to the elements of the  
20 Extension Program and are as follows:

- 21 • PSE&G will own and operate the solar systems.
- 22 • PSE&G will finance the investments.

- 1           • PSE&G may retain the services of an engineering firm for site assessment,  
2           development of the scope of work, permitting, proposal review, and other  
3           services.
- 4           • PSE&G will obtain all required permits and provide overall project and  
5           construction management.
- 6           • The Company intends to hire solar industry firms, through a competitive  
7           process, to provide the engineering, procurement and construction (“EPC”)  
8           services required to develop the projects. Attached is a model EPC contract  
9           (Exhibit A).<sup>12</sup>
- 10          • PSE&G plans to use its own workforce for interconnection work.
- 11          • For those projects that qualify as a “public work,” as defined by statute, the  
12          service provider will adhere to all aspects of the New Jersey State Prevailing  
13          Wage Act, N.J.S.A. 34:11-56.25 et seq., and will require the same of all  
14          subcontractors.
- 15          • For those projects that do not qualify as public works, service providers will be  
16          required to pay the equivalent of the prevailing wage for the county in which the  
17          work is to be performed, unless the work is performed by union employees, in  
18          which case the employees will be paid in accordance with the union contract.
- 19          • The prevailing wage requirements will be a PSE&G contract requirement.
- 20          • PSE&G will perform program administration and management and may, at its  
21          discretion, contract out parts of this work.
- 22          • Quality assurance will be provided by PSE&G’s monitoring and supervision  
23          during construction and over the life of the Program.
- 24          • PSE&G will leverage its existing monitoring systems for all projects in this  
25          proposal, thus effectively managing Extension II Program costs.

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<sup>12</sup> The contract is in draft form and may be subject to further modification based on, among other things, the facts and circumstances related to each individual project, negotiations with the counterparties, the settlement agreement governing the Program, advice of counsel, changes in law, and other relevant factors.

- 1           • The solar systems will be interconnected with PSE&G’s distribution system at  
2           distribution voltage on the utility’s side of the meter – i.e., they will be grid-  
3           connected and feed electricity directly into the distribution system.
- 4           • The solar systems will be metered to determine the aggregate energy output and  
5           the number of SRECs generated. PSE&G will register the solar systems with  
6           the BPU and PJM Generation Attribute Tracking System (“GATS”).
- 7           • The solar systems will generate value for ratepayers through the production of  
8           energy, capacity (if appropriate), and SRECs to help offset program costs. The  
9           cost to ratepayers will be further reduced by accelerated tax depreciation and the  
10          flow-through of Federal ITC.
- 11          • PSE&G will sell all SRECs it receives from the solar systems in the SREC  
12          auction that the Board has previously approved for the current Solar 4 All  
13          Programs. The net revenues PSE&G receives from selling the SRECs (i.e.,  
14          revenues less the cost of conducting the auction) will be credited to customers,  
15          offsetting the Extension II Program’s revenue requirements and reducing the  
16          overall rate impact.
- 17          • PSE&G will sell energy and capacity (if appropriate) from the solar systems  
18          into the PJM market and credit all revenues it receives to customers, thereby  
19          offsetting the Extension II Program’s revenue requirements and reducing the  
20          overall rate impact.
- 21          • Federal tax rules such as the Federal Solar ITC and certain depreciation rules  
22          will benefit customers by offsetting revenue requirements over the life of the  
23          assets in accordance with federal income tax law. A more detailed description  
24          of both the ITC and the depreciation rules is provided in the testimony of Mr.  
25          Stephen Swetz.
- 26          • PSE&G will make lease payments to the host sites. PSE&G and the site owner  
27          will enter into a suitable lease agreement (“Lease”) containing typical terms and  
28          conditions including rent payments, insurance, indemnifications, owner  
29          responsibility for pre-existing site conditions, and access, all to be negotiated

1 with the site owner. Lease payments will commence upon the commercial  
2 operation of the solar system. The lease payment will be determined using a  
3 methodology similar to that used in the current Solar 4 All Extension Program,  
4 and will be executed for the term of the project unless applicable law requires a  
5 shorter term; the lease may contain options to extend the term as negotiated by  
6 the parties. Attached is a draft lease agreement (Exhibit B).<sup>13</sup>

- 7 • Additional payments may be made to site owners, which may also include pre  
8 and post commercial operation payments, and other option payments necessary  
9 to secure property rights for the site. The site owner must accept responsibility  
10 for pre-existing site conditions including, but not limited to, environmental and  
11 subsurface conditions. PSE&G will not be responsible for pre-existing site  
12 conditions as set forth in the Program Rules (Exhibit C).
- 13 • The Extension II Program calls for recovery of all prudently incurred costs  
14 through the Green Programs Recovery Charge (“GPRC”). Recoverable costs  
15 include capital investment recovered over its book depreciable life, return on the  
16 unrecovered investment balance at the proposed weighted average cost of  
17 capital for the Program, and O&M expenses (as described above) net of revenue  
18 from SREC, energy and capacity (if available) sales, and appropriate tax  
19 benefits (as described above). A more detailed description is provided in the  
20 testimony of Mr. Stephen Swetz.

21 **Q. Do you have an estimate of how many projects will be built and how much**  
22 **renewable energy will be generated?**

23 A. Yes. For modeling purposes it was assumed that 8 projects would be built. Four  
24 projects would be 10 MW each and the other four projects would be 15 MW each.  
25 Schedule TWH-S4AEII-4 contains an annual projection of when projects will go into

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<sup>13</sup> The draft lease agreement may be subject to further modification based on, among other things, the facts and circumstances related to each individual project, negotiations with the counterparties, the settlement agreement governing the Program, advice of counsel, changes in law, and other relevant factors.

1 service and the amount of renewable energy generation for the life of the Extension II  
2 Program. The actual number of projects and their size will be dependent on  
3 individual sites and site conditions.

4 **Q. Are there significant differences between the Extension II Program and the**  
5 **Solar 4 All Extension Program?**

6 A. Yes. In recent years manufacturers have increased the quality and durability of both  
7 solar panels and inverters, resulting in longer hardware warranties. To be consistent  
8 with current hardware warranties, the solar panel book life has been extend from 20  
9 years to 25 years and the inverter and communication equipment book life has been  
10 extended from five years to ten years.

11 **V. THE SOLAR 4 ALL EXTENSION II PROGRAM ADDRESSES MARKET**  
12 **BARRIERS**

13 **Q. Do PSE&G's Solar 4 All Extension and Extension II programs help overcome**  
14 **entrenched market barriers?**

15 A. Absolutely. First, like the Extension Program, the Extension II Program focuses on  
16 sites that are currently underutilized and not likely to provide beneficial use.  
17 Similarly, because of the complexity and risk of developing solar power on landfills  
18 and brownfields, developers generally avoid these properties. In fact, there have only  
19 been a few sites of this type developed in New Jersey, mainly by PSE&G through its  
20 Solar 4 All Extension Program. PSE&G has experience in developing solar projects  
21 on both landfills and brownfields.

1 **VI. RELATIONSHIP TO OTHER PROGRAMS**

2 **Q. Is the proposed Program similar to any other programs currently conducted in**  
3 **New Jersey?**

4 A. No. Other than PSE&G's original Solar 4 All Program and the Extension Program,  
5 the Extension II Program is not similar to any current program administered by the  
6 Board's Office of Clean Energy ("OCE").

7 **Q. Why is that significant?**

8 A. Under PSE&G's Solar 4 All approach, relatively large-scale solar systems are grid-  
9 connected, providing solar energy to all our customers, not just to the host sites.  
10 Through the Solar 4 All approach PSE&G is unique among New Jersey utilities and  
11 unique nationwide as the only utility solar program focused on landfill/brownfield  
12 development. PSE&G has installed 28 community-based, larger scale solar projects  
13 similar to those to be developed here, with existing projects already totaling more  
14 than 75 MW, which again feed into the local grid and provide clean electricity to all  
15 of our customers. In addition, PSE&G has brought the benefits of solar into every  
16 neighborhood where we operate, through the approximately 40 MW pole-attached  
17 segment of the original Solar 4 All Program.

18 **VII. DISPUTE RESOLUTION PROCEDURES**

19 **Q. Please describe the dispute resolution procedures that will be followed under the**  
20 **Program.**

21 A. Customer complaints relating to the design, delivery, or administration of the  
22 Program segments potentially could be received through two means: directly to  
23 various PSE&G customer contact personnel and departments, or directly to the

1 NJBPU. In both instances the immediate issue would be referred to the appropriate  
2 PSE&G management personnel to investigate and resolve.

3 PSE&G will attempt to resolve disputes with its customers informally in the  
4 first instance. See Schedule TWH-S4AEII-3 for the flow chart on how customer  
5 complaints will be processed. Disputes that involve PSE&G's administration of the  
6 Program that cannot be resolved informally will be resolved through the BPU's  
7 existing process for customer complaints within the appropriate Division. Disputes  
8 between PSE&G and its sub-contractors will be resolved in accordance with contract  
9 provisions. Disputes under the Program that involve monetary claims or civil  
10 damages that cannot be decided by the NJBPU will be resolved in an appropriate  
11 court of law.

12 **VIII. QUALITY CONTROL METHODS**

13 **Q. Please summarize the quality control methods that will be applied.**

14 A. PSE&G maintains the quality and safety of Solar 4 All projects by requiring solar  
15 developers to design and construct solar facilities in accordance with applicable  
16 governing rules and regulations. The designs are signed and submitted by a New  
17 Jersey Licensed Professional Engineer and reviewed, inspected, and approved by the  
18 agency or agencies with jurisdiction. Solar facilities are also inspected and  
19 commissioned, validating that the facility passes a performance test demonstrating  
20 that the ratio of each system's actual output in kWh over the expected output in kWh  
21 conforms to the terms and conditions of the construction contract. PSE&G solar  
22 facilities that are part of the Solar 4 All Program are inspected by an independent

1 third party to verify that each facility meets design specification, which includes  
2 verifying equipment, performance and shading (if applicable), construction  
3 techniques, array tilt and azimuth, grounding conductors, and other parameters as  
4 dictated by site conditions. When the solar facility is placed into service, an  
5 operations and maintenance program is deployed consisting of routine inspections  
6 and equipment maintenance activities, and a 24-hour monitoring system is put in  
7 place to report on the status and performance of the facility, alerting operations and  
8 maintenance personnel of any urgent issues that may arise. All of these quality  
9 control methods currently employed as part of the Solar 4 All Program will continue  
10 to be implemented as part of the Extension II Program.

11 **IX. IMPACT ON THE SREC MARKET**

12 **Q. Do you have any concerns that the Extension II Program will have a detrimental**  
13 **impact on the SREC market?**

14 A. No. The SREC's generated by the Extension II Program will only represent a small  
15 fraction of the SREC's needed to fulfill the RPS requirement. For example, by  
16 Energy Year 2022 when the Extension II Program is fully built out, the RPS  
17 requirement, assuming no additional load growth, will be about 2,700,000 SREC's.  
18 At that time, the Extension II Program will be creating about 117,000 SREC's per  
19 year which is only 4.3% of the requirement, hardly enough to have a significant  
20 impact on the market.

1 **Q. If stakeholders are concerned about a possible impact on the SREC market, are**  
2 **there any options?**

3 A. Yes. There are several options, some of which have been used in the past. In the  
4 Solar 4 All Extension Program, PSE&G agreed to install no more than a specified  
5 amount of solar capacity in the first year of the program. In the Solar Loan III  
6 Program, PSE&G was required to hold SREC's until a future Energy Year. Another  
7 option would be a trigger mechanism that would be established by the Board.

8 **CONCLUSION**

9 **Q. Do you have any thoughts in conclusion at this time?**

10 A. Yes I do. PSE&G, with the support of the Administration, the Legislature, the Board,  
11 and the Division of Rate Counsel, has been and continues to be an essential force in  
12 facilitating economic growth, creating jobs and meeting the State's renewable energy  
13 goals through the development of solar systems. Approval of the Extension II  
14 Program will allow PSE&G to continue in that critical role consistent with the solar  
15 energy directives set forth in New Jersey's Energy Master Plan and the Solar Act.  
16 PSE&G can take on more challenging sites, perform at a competitive cost, infuse  
17 needed capital into the market, provide governments and private landfill owners with  
18 a new source of revenue through lease payments, and create a substantial number of  
19 jobs and economic activity in difficult economic times.

20 PSE&G is unique in that it combines substantial experience in the  
21 development of large scale grid-connected projects with the financial wherewithal to  
22 utilize available tax benefits and execute solar projects on a large scale. The  
23 Extension II Program will have a positive effect on New Jersey's economic growth

1 and allow all customers the benefits of solar power. With the support of our  
2 customers, I believe we must continue to forge ahead as other innovators have in the  
3 past, and accomplish this visionary Solar 4 All Extension II Program work through  
4 the collaboration of PSE&G, the Board, the Division of Rate Counsel, solar  
5 developers and installers, and all stakeholders for the benefit of New Jersey.

6 **Q. Does that conclude your testimony at this time?**

7 A. Yes it does.



1 Jersey. The L&D project is the largest Solar 4 All project and largest landfill solar project in  
2 New Jersey. I also led the team responsible for developing PSE&G's first ever solar and  
3 battery storage project at Hopewell Valley Central High School in Hopewell, New Jersey that  
4 provides backup power for a warming station, emergency lighting and refrigeration in the  
5 event of an outage. We are currently under construction or development on two other solar  
6 and battery storage projects, one at Cooper Hospital in Camden, New Jersey that will provide  
7 backup power for refrigeration of vital medicines. The other is the Caldwell Wastewater  
8 Treatment facility in West Caldwell, New Jersey that will work in conjunction with existing  
9 onsite generation to supplement the backup power to the facility to protect against  
10 wastewater flowing into New Jersey's waterways. I managed the construction of PSE&G's  
11 largest parking lot solar canopy, a 1.072 MW-dc solar system at the PSE&G Moorestown  
12 facility. In addition, I am responsible for managing the largest pole attached solar system in  
13 the world, a 40 MW-dc system that includes over 174,000 solar units throughout the PSE&G  
14 electric service territory.

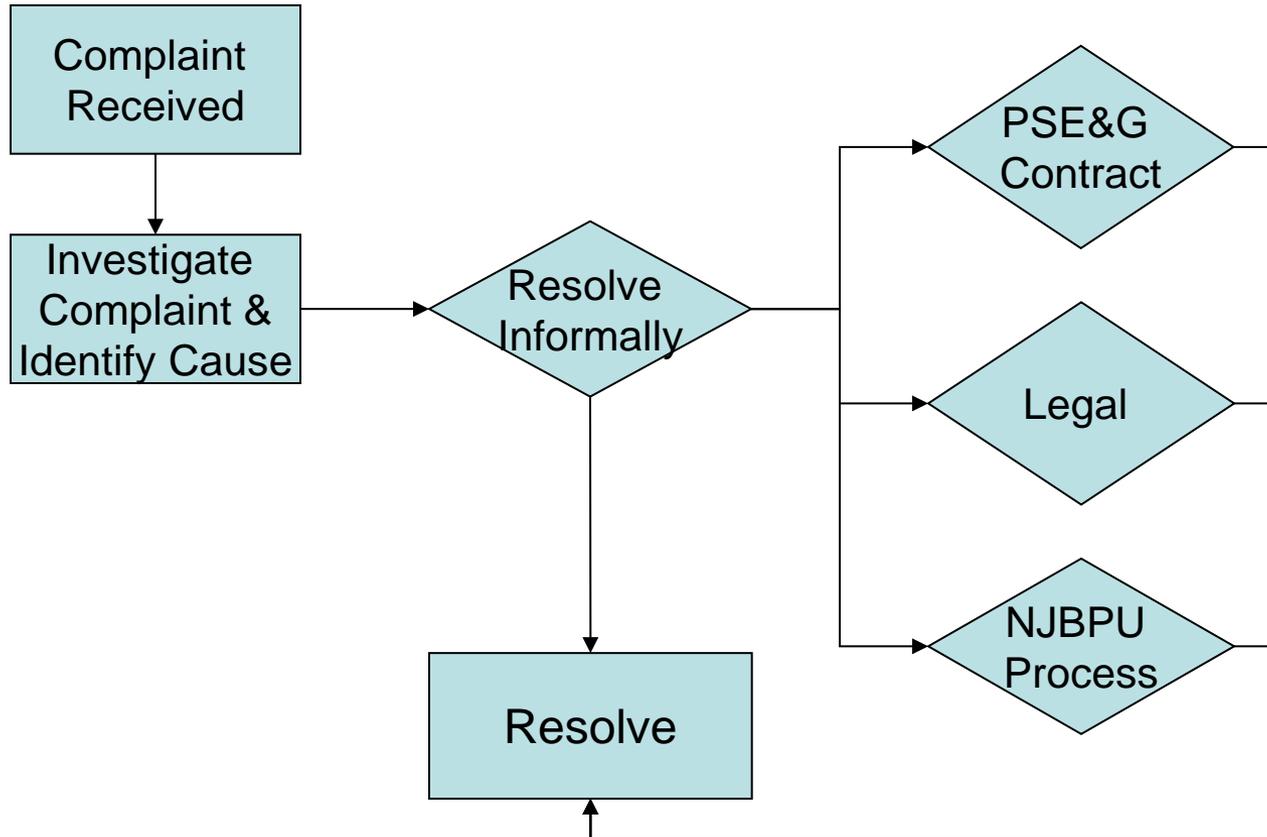
15 In October, 2013, I led the design and implementation of the first PSE&G  
16 customer web portal for our Solar Loan III Program.

17 For the past five years, annually I attend Solar Power International, Smart  
18 Electric Power Alliance (SEPA) and PV America Conferences to take part in educational  
19 sessions, investigate new technologies, view demonstrations and generally increase my  
20 expertise in the field. I am an active member of SEPA and am a frequent speaker at solar  
21 industry events.

**Schedule TWH-S4AEII-2**  
**PAGE 1 OF 1**

	Adminstrative	Marketing	Program Implementation	Other		
				Rent	O&M	Insurance
2016	203,659	-	1,188,760	-	-	-
2017	839,076	-	36,567,591	-	-	-
2018	864,249	-	72,190,074	465,885	263,116	44,243.01
2019	890,176	-	68,166,016	1,604,715	963,288	155,440.44
2020	916,882	-	64,142,947	2,640,015	1,616,455	260,839.09
2021	944,388	-	33,463,413	3,571,785	2,219,300	359,957.94
2022	1,162,580	-	-	4,141,200	2,632,160	425,689.39
2023	1,197,457	-	-	4,141,200	2,671,410	434,203.18
2024	1,233,381	-	-	4,141,200	2,711,246	442,887.25
2025	1,270,382	-	-	4,141,200	2,751,675	451,744.99
2026	1,308,494	-	-	4,141,200	2,792,707	460,779.89
2027	1,347,748	-	2,250,000	4,141,200	2,834,351	469,995.49
2028	1,388,181	-	4,725,000	4,141,200	2,876,616	479,395.40
2029	1,429,826	-	4,500,000	4,141,200	2,919,511	488,983.31
2030	1,472,721	-	4,275,000	4,141,200	2,963,046	498,762.97
2031	1,516,903	-	2,250,000	4,141,200	3,007,230	508,738.23
2032	1,562,410	-	-	4,141,200	3,052,072	518,913.00
2033	1,609,282	-	-	4,141,200	3,097,584	529,291.26
2034	1,657,561	-	-	4,141,200	3,143,774	539,877.08
2035	1,707,287	-	-	4,141,200	3,190,653	550,674.62
2036	1,758,506	-	-	4,141,200	3,238,231	561,688.12
2037	1,811,261	-	-	4,141,200	3,286,518	572,921.88
2038	1,865,599	-	-	4,141,200	3,335,526	584,380.32
2039	1,921,567	-	-	4,141,200	3,385,264	596,067.92
2040	1,979,214	-	-	4,141,200	3,435,744	607,989.28
2041	2,038,590	-	-	4,141,200	3,486,977	620,149.07
2042	2,099,748	-	-	4,141,200	3,538,973	632,552.05
2043	1,919,432	-	-	3,675,315	3,288,382	572,617.74
2044	1,364,419	-	-	2,536,485	2,330,556	403,090.63
2045	831,739	-	-	1,501,185	1,440,862	243,335.12
2046	324,952	-	-	569,415	624,066	94,145.52
2047	-	-	-	-	-	-

# COMPLAINT PROCESS FLOW CHART



**Solar 4 All Extension II Projected Renewable Generation**

<u>Year</u>	<u>Number of Projects</u>	<u>Installed Capacity (MW)</u>	<u>Renewable Generation (kWh)</u>
2017			-
2018	2	25	12,644,921
2019	2	25	45,386,404
2020	2	25	74,667,735
2021	2	25	100,504,441
2022			116,864,157
2023			116,281,174
2024			115,701,098
2025			115,123,917
2026			114,549,614
2027			113,978,177
2028			113,409,590
2029			112,843,840
2030			112,280,912
2031			111,720,792
2032			111,163,467
2033			110,608,921
2034			110,057,142
2035			109,508,116
2036			108,961,828
2037			108,418,266
2038			107,877,415
2039			107,339,263
2040			106,803,794
2041			106,270,998
2042			105,740,859
2043			96,326,922
2044			66,930,615
2045			40,568,360
2046			17,226,440
2047			-

Contract Id No. MA--\_\_\_\_\_

**PROPRIETARY AND CONFIDENTIAL**

TURNKEY, LUMP-SUM ENGINEERING, PROCUREMENT AND CONSTRUCTION  
CONTRACT FOR A SOLAR PHOTOVOLTAIC PROJECT

Dated as of \_\_\_\_\_ \_\_, 201\_\_

between

Public Service Electric and Gas Company

and

\_\_\_\_\_

This Turnkey, Lump-Sum, Engineering, Procurement, and Construction Contract for a Solar Photovoltaic Project (the “EPC Contract”), dated as of \_\_\_\_\_, 201\_\_, is by and between Public Service Electric and Gas Company, a New Jersey corporation (the “Company” or “PSE&G”), and \_\_\_\_\_, a \_\_\_\_\_ (the “EPC Contractor”). The EPC Contractor and PSE&G are sometimes referred to individually as a “Party” and collectively as the “Parties.”

**WITNESSETH:**

**WHEREAS**, by order dated \_\_\_\_\_, 201\_\_ the New Jersey Board of Public Utilities (“NJBP”), in Docket Number \_\_\_\_\_ (the “BPU Order”), authorized the Company to invest funds to construct, own and operate solar electric generating projects located on landfills and brownfields;

**WHEREAS**, the Company desires to have constructed and placed into operation one solar photovoltaic electric generating system and related ancillary equipment (the “Project”) capable of producing approximately [\_\_\_\_\_] megawatts (dc) of electrical power in accordance with this EPC Contract;

**WHEREAS**, the Company desires the EPC Contractor to build the Project on the landfill [*or brownfield*] located in \_\_\_\_\_ (the “Site”), as further identified in Exhibit F, which is owned by \_\_\_\_\_ (the “Host”);

**WHEREAS**, the Company and the Host have entered into a [*optional: are negotiating a*] lease dated as of \_\_\_\_\_, 201\_\_ (“Lease”) pursuant to which the Company is authorized to construct the Project on the Site; and

**WHEREAS**, the EPC Contractor, itself or through qualified Subcontractors, will provide all of the engineering, design, procurement, project management, construction, testing, start-up and commissioning for the Project in accordance with and subject to the terms and conditions set forth in this agreement.

**NOW, THEREFORE**, in consideration of the mutual promises contained herein, and for other good and valuable consideration, the sufficiency of which is hereby acknowledged, the Parties, intending to be legally bound, agree as follows:

1. **EPC Contract Documents**. This EPC Contract includes the documents listed below, together with any other documents referenced therein, including Exhibits and Attachments, which as a whole, constitute the entire agreement between the Parties, all of which form one integrated agreement and arrangement for the EPC Contract:

- Part I – EPC Contractor’s Scope of Work
- Part II - EPC Contract Terms and Conditions

2. **Order of Precedence.** The Parts and all components of this EPC Contract are to be considered complimentary and what is required by one will be binding as if required by all. If there is a conflict between Parts I and II of this EPC Contract, the provisions of Part II will govern. In the event of a conflict within either Parts I or II, or within any of the components thereof, the most stringent requirement will take precedence, except as may be otherwise determined by Company.

3. **Headings.** The table of contents and article, section, exhibit and attachment, titles and headings are inserted for convenience only and shall not be used for the purposes or interpreting this EPC Contract.

4. **Plural and Singular.** Words importing the singular also include the plural and vice versa.

5. **Without Limitation.** The words “include” and “including” are not words of limitation and shall be deemed to be followed by the words “but not limited to.”

6. **Reference to EPC Contract.** The words “herein”, “hereof,” or “hereunder” or similar terms refer to this EPC Contract as a whole and not to any specific article or section.

7. **Entire Agreement.** This EPC Contract constitutes the full, complete and only agreement between the Parties with respect to the Work. This EPC Contract supersedes any course of performance, course of dealings, usage of trade, previous agreements, representations, understandings, either oral or written between the Parties and their affiliates. No terms, conditions, agreements, representations, understandings, course of performance, course of dealing, or usage of trade purporting to modify, vary, supplement, explain, or amend any provisions of this EPC Contract shall be effective unless in writing, in the form of a Change Order executed by either the Company or by both the Company and the EPC Contractor. If any part of this EPC Contract is determined to be judicially unenforceable for any reason, the remainder of this EPC Contract shall remain in full force and effect.

8. **Mutual Representations and Warranties.** Each of the EPC Contractor and Company hereby represent and warrant that:

- 8.1. it is duly organized and validly existing in good standing under the laws of its jurisdiction of its organization and is duly qualified and authorized to do business and is in good standing in all other jurisdictions where it is required to be so qualified;
- 8.2. it has the power and authority to (a) own its property and assets and to transact the business in which it is engaged and proposes to engage hereby and (b) execute, deliver and perform this EPC Contract;
- 8.3. it has taken all necessary action to authorize the execution, delivery and performance of this EPC Contract, and it has duly executed and delivered this EPC Contract;

- 8.4. the execution, delivery and performance of this EPC Contract will not (a) contravene any Law, (b) conflict with or result in any breach of any agreement to which it is a party, or (c) violate any provision of its organizational or formation documents;
- 8.5. no authorization or approval or other action by, and no notice to or filing with, any Governmental Authority is required for the due execution, delivery and performance of this EPC Contract, other than those that have been duly obtained or made and are in full force and effect;
- 8.6. This EPC Contract constitutes the legal, valid, and binding obligation of each Party, enforceable in accordance with its terms, except to the extent that the enforceability thereof may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by equitable principles (regardless of whether enforcement is sought in equity or law);
- 8.7. there is no action, suit or proceeding now pending or (to the best of its knowledge) threatened against it (or any Subcontractor, in the case of the Contractor) before any court, administrative body or arbitral tribunal that could reasonably be expected to adversely affect the ability of such Party (or any Subcontractor, in the case of the Contractor) to perform its obligations hereunder (or under any Subcontract).
9. **Lease Condition Precedent.** *[Use if no Lease is executed at the time of signing the EPC Contract]* Notwithstanding any other provision contained in this EPC Contract, it shall be a condition precedent to the effectiveness of this EPC Contract that the Company shall have executed a satisfactory Lease with the Host (the "Lease Condition Precedent"). The Company shall promptly advise the EPC Contractor in writing of the execution of such Lease, which is expected to occur on or about [\_\_\_\_\_], 201\_\_.
10. **[Placeholder for BPU Condition Precedent (if any)]**
11. **Counterparts; Facsimile and Scanned Signatures.** This EPC Contract may be executed and delivered by facsimile or electronically scanned signature and in several counterparts, each of which shall be an original and all of which together shall constitute one and the same instrument.

*[Signature Block on Following Page]*

**IN WITNESS WHEREOF**, the Parties have caused this EPC Contract to be executed by their authorized representatives as of the date first above written.

\_\_\_\_\_  
[EPC Contractor]

**Public Service Electric and Gas Company**

By: \_\_\_\_\_  
Name:  
Title:

By: \_\_\_\_\_  
Name:  
Title:

*[Signature Page to EPC Contract]*

**PART I**

**PSE&G Solar 4 All**

**EPC Contractor's Scope of Work**

**PART II**

EPC CONTRACT TERMS AND CONDITIONS

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**EXHIBIT A - CHANGE REQUEST**

**EXHIBIT B - MILESTONE PAYMENT SCHEDULE**

**EXHIBIT C - PAYMENT APPLICATION**

**EXHIBIT D - RETAINAGE LC**

**EXHIBIT E - AFFIDAVIT OF PAYMENT AND FINAL RELEASE**

**EXHIBIT F - SITE**

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**EXHIBIT H - LABOR RATES AND UNIT PRICING**

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**EXHIBIT J - CERTIFICATE OF SUBSTANTIAL COMPLETION**

**EXHIBIT K - CERTIFICATE OF FINAL ACCEPTANCE**

**EXHIBIT L - PASS-THROUGH WARRANTIES**

**EXHIBIT M - SYSTEM PERFORMANCE TEST PROCEDURES**

**EXHIBIT N - PERMIT RESPONSIBILITY MATRIX**

**EXHIBIT O - LAND USE AGREEMENT**

**EXHIBIT P - WORKMANSHIP LC**

**EXHIBIT Q - EPC CONTRACTOR INSURANCE**

**EXHIBIT R - AVAILABILITY FACTOR TEST**

**EXHIBIT S - KEY EPC CONTRACTOR PERSONNEL**

**EXHIBIT T - PAYMENT BOND - PERFORMANCE BOND**

**EXHIBIT U - FORM OF GUARANTY**

**ARTICLE 1. INTENT**

1. It is the intent of the Parties that the EPC Contractor engineer, design, procure, project manage, construct, test, start-up and commission the Project in accordance with this EPC Contract. The EPC Contractor shall perform all of the work specified or implied by this EPC Contract in order to accomplish the intent of the Parties. The EPC Contractor shall perform everything requisite and necessary to complete the entire Project notwithstanding the fact that every item of work may not be specifically mentioned and all such work shall be adequately and properly performed by the EPC Contractor at no extra cost to Company except as may be set forth in a Change Order. The objective of this EPC Contract is to relieve the Company of the necessity of engaging or supplying any labor, service or material to complete the Project unless expressly stated otherwise herein. The EPC Contractor acknowledges that it has the experience and expertise to perform the EPC Contract, which is a material inducement to the Company for entering into this EPC Contract.

**ARTICLE 2. DEFINITIONS**

The following definitions shall apply herein:

**“Adverse Derogatory Information” or “ADI”** is defined in Article 68.

**“Antiquity”** means any man-made object, fossil, human remains, or evidence of human burials, which has a reasonable likelihood of being determined by any Governmental Authority to be of historical value and require preservation.

**“As-Built Drawings”** means the final corrected and redrawn drawings or documents that reflect the Work performed, Materials installed and the actual Project as constructed, which have been certified or sealed by a duly licensed professional engineer. EPC Contractor shall provide As-Built Drawings in CAD format upon request.

**“ATPR”** is defined in Article 9.

**“Availability Factor Test”** means the test to be performed by EPC Contractor on the one year anniversary of the Substantial Completion Date in accordance with Exhibit R.

**“Availability Liquidated Damages”** is defined in Article 9.

**“BA&R”** as defined in Article 68.

**“Background Check Administrator”** is defined in Article 68.

**“BCVC”** is defined in Article 68.

**“CIP”** is defined in Article 68.

**“Contractor Representative”** is defined in Article 68.

**“Certificate of Final Acceptance”** means a certificate issued by the EPC Contractor and accepted by the Company in accordance with Article 7, substantially in the form attached hereto as Exhibit K.

**“Certificate of Substantial Completion”** means a certificate issued by the EPC Contractor and accepted by the Company in accordance with Article 6, substantially in the form attached hereto as Exhibit J.

**“Change”** means a Time Change or a Price Change.

**“Change in Law”** means the adoption, enactment, amendment or change in Law applicable to the Project after the date of this EPC Contract which, at the time of the Change in Law, has a material impact on the cost of the Work or the Project Schedule critical path. Notwithstanding the foregoing, the following shall not be considered a Change In Law: the adoption, enactment, amendment or change in Law (a) by a Municipality, (b) with respect to (i) taxes or levies assessed on the EPC Contractor’s income, profits, revenues, or gross receipts, or (ii) taxes, levies or withholdings that vary the compensation, benefits, or amounts to be paid to or on behalf, on account of the employees of EPC Contractor or any Subcontractor or (c) any change in a Permit caused by the acts or omissions of any EPC Contractor Person.

**“Change Order”** is a written order executed by the Company pursuant to Article 31 authorizing a Change or other modification of this EPC Contract.

**“Change Request”** is a document, substantially in the form of Exhibit A, prepared by the EPC Contractor as a proposal for a Change.

**“Change Trigger Event”** is (a) a Change in Law, (b) Suspension by Company, (c) Company Directed Change; (d) Termination for Convenience; and (e) the occurrence of a Force Majeure Excused Event. For the avoidance of doubt, the existence of an Unforeseen Site Condition on the Site is not a Change Trigger Event.

**“Claim”** means any claim, allegation, action, suit or proceeding (regardless of merit) asserted by any Person.

**“Company”** is Public Service Electric and Gas Company.

**“Company Permit”** means each permit Company is required to obtain as set forth in Exhibit N.

**“Company Person”** means Company and its agents, representatives, contractors, vendors, subsidiaries, direct and indirect owners and affiliates (and any successor or assignee of any of the foregoing Persons) to the extent the foregoing Persons or entities are not the EPC Contractor Persons.

**“Company Directed Change”** is defined in Article 30.

**“Construction Manager”** is defined in the Scope.

**“Cure Period”** is defined in Article 6.

**“Day”** means a calendar day including any Saturday, Sunday and holiday.

**“Deemed Export”** is defined in Article 69.

**“Delay Liquidated Damages”** is defined in Article 8.

**“Delayed Payment Rate”** means five (5) percent per annum.

**“Eligible Bank”** means any bank or financial institution reasonably acceptable to the Company organized under the laws of the United States with (i) a credit rating of at least (a) "A" by S&P or "A2" by Moody's, if such entity is rated by both S&P and Moody's or (b) "A" by S&P or "A2" by Moody's, if such entity is rated by either S&P or Moody's but not both, and (ii) having a capital surplus of at least \$10 billion.

**“Emergency Entities”** is defined in Article 18.

**“Environmental Event”** means any event that may have an impact on the environment including a spill, violation of any Permit condition, equipment oil leak, encroachment on wetlands or other protected natural resource.

**“EPC Contract”** means this Turnkey, Lump-Sum Engineering, Procurement and Construction Contract between the Company and the EPC Contractor and all the Exhibits and Appendices hereto.

**“EPC Contract Price”** is defined in Article 58 of the EPC Contract.

**“EPC Contractor”** is defined in the first sentence of this EPC Contract.

**“EPC Contractor Event of Default”** shall have the meaning ascribed thereto in Article 42.

**“EPC Contractor Permits”** means each permit EPC Contractor is required to obtain as set forth in Exhibit N.

**“EPC Contractor Taxes”** is defined in Article 59.

**“EPC Contractor Person”** means the EPC Contractor, any subsidiary, affiliate, agent, successor or assignee of the EPC Contractor, or any Subcontractor.

**“Export Control Laws”** is defined in Article 69.

**“Field Incidents”** means workplace injuries not requiring first aid or medical care that are documented for record purposes only.

**“Final Acceptance”** is defined in Article 7.

**“Final Acceptance Date”** means the date on which Final Acceptance occurs.

**“Financing Party”** means any Person providing financing to Company including any trustee or agent representing any such Person.

**“First Aid Incidents”** means workplace injuries and illnesses that involve medical care but do not meet OSHA recording criteria.

**“Force Majeure Excused Event”** is defined in Article 42.

**“Foreign National”** is defined in Article 69.

**“Governmental Authority”** means the governmental and municipal authorities of the United States or any state therein or any department, subdivision (political or otherwise), municipality, instrumentality, county, agency, corporation or commission under the direct or indirect control thereof.

**“Guaranteed Substantial Completion Date”** is defined in Article 8.

**“Guarantees”** means the Schedule Guarantee described in Article 8 and the System Performance Guarantees described in Article 9.

**“Guaranty”** means the guaranty issued by the Guarantor substantially in the form as provided in Exhibit U or such form as otherwise agreed to by the Company.

**“Guarantor”** means \_\_\_\_\_

**“Hazardous Material”** means any chemicals, materials or substances designated, classified or regulated as hazardous or toxic or as pollutants or contaminants under any Law.

**“HAZWOPER”** is defined in Article 18.

**“Host”** is defined in the Recitals.

**“Incident”** means any Field Incident, First Aid Incident, OSHA Recordable, Environmental Event, near miss, operational incident, unplanned equipment operations, damage to any equipment, equipment failures, or other noteworthy event.

**“Insured Parties”** is defined in Article 17.

**“Key EPC Contractor Personnel”** shall have the meaning set forth in Article 24.1.

**“Land Use Agreements”** means (a) the Lease, (b) any access right or other right to use or traverse real property, and (c) any encumbrance, easement, license, restriction, or limitation of any kind applicable to the Site or used in connection with the construction of the Project.

**“Law”** means (a) any constitution, charter, act, statute, law, ordinance, rule, regulation, order, legislative or administrative action of any Governmental Authority applicable to either party or the Work; (b) any final decree, judgment or order of a court; and (c) any Permit, code or standard of any Governmental Authority applicable to the Project.

**“Lawful Permanent Resident”** is defined in Article 69.

**“Lease”** shall have the meaning set forth in the Recitals.

**“Lien”** means any lien, notice of lien, Claim, charge, security interest, defect in title, attachment or encumbrance including materialman’s, laborer’s, mechanic’s, subcontractor’s and vendor’s liens.

**“Liquidated Damages”** are the Performance Liquidated Damages, the Availability Liquidated Damages and the Delay Liquidated Damages.

**“Long Lead Time Equipment”** means the solar panels, switchgear, transformers, racking, inverters, and power station platforms.

**“Loss”** means any liability, loss, damage, fine, judgment, penalty, fee, cost, or expense (including reasonable attorney’s fees).

**“Major Equipment Vendors”** means the supplier or vendor that provides or supplies solar panel modules, inverters, racking systems, transformers, switchgear and monitoring equipment for the project.

**“Materials”** means any articles, apparatus, goods, materials, products, items, data, documents, supplies, equipment, component parts and assemblies, or any other substances, parts, or any combination thereof used, consumed, furnished or installed by any EPC Contractor Person as part of the Project.

**“Moody’s”** means Moody’s Investors Service, Inc.

**“Milestone Payment”** means a payment to the EPC Contractor by Company of a portion of the EPC Contract Price for the Work.

**“Milestone Payment Schedule”** means the milestone payment schedule set forth in Exhibit B.

**“Municipality”** means any village, borough, township, town or city located in New Jersey.

**“NAPBS”** is defined in Article 68.

**“NERC”** is defined in Article 68.

**“Notice of Claim”** means a written notice from the Company to the EPC Contractor of any claim or demand indemnifiable under this EPC Contract. The Notice of Claim shall include details sufficient to apprise the EPC Contractor of the circumstances surrounding the claim or demand.

**“OSHA”** means the Occupational Safety and Health Act of 1970 (29 U.S.C. §651) as amended.

**“OSHA Recordable”** means any workplace fatality, injury or illness that meets OSHA general or specific recording criteria.

**“Payment Application”** is set forth in Exhibit C.

**“Performance LC”** means the irrevocable standby letter of credit in substantially the form of Exhibit G.

**“Performance Liquidated Damages”** are the liquidated damages described in Article 9.

**“Permit”** means any permit, approval, license, consent, variance, notification or authorization required by any Governmental Authority in connection with the Work or the Project.

**“Person”** means any individual, entity, corporation, partnership, joint venture, limited liability company, association, joint-stock company, trust, unincorporated organization or Governmental Authority.

**“Price Change”** is the actual, verifiable incremental increase or decrease in costs reasonably and prudently incurred as a direct result of a Change Trigger Event. The EPC Contractor’s compensation for performing the Work as the result of a Change Trigger Event shall not exceed the EPC Contractor’s direct cost plus ten percent (10%) to cover indirect costs, fees, overhead, and profit.

**“Project Schedule”** is defined in the Scope.

**“Protected Individual”** is defined in Article 69.

**“Punch List”** means a list of uncompleted Work.

**“Required Rating”** means, with respect to any Person, that such Person’s non-credited enhanced long-term senior unsecured debt is rated at least A3 by Moody’s or A- by S&P.

**“Retainage”** means the funds withheld by Company from the payment of the Contract Price (and/or available under the Retainage LC) which may be applied, if necessary, by Company towards completion of the Work or in satisfaction of any of the EPC Contractor’s other obligations hereunder and, with respect to any Milestone Payment, shall be an amount equal to ten (10%) percent of such Milestone Payment.

**“Retainage LC”** means the irrevocable standby letter of credit in substantially the form of Exhibit D.

**“S&P”** means Standard & Poor’s Ratings Services, a division of The McGraw-Hill Companies, Inc.

**“Site”** has the meaning set forth in the Recitals.

**“Scope”** is set forth as Part I.

**“Specifications and Drawings”** means the specifications and drawings prepared by the EPC Contractor with regard to the Work in the manner required by this EPC Contract.

**“Standard Test Conditions”** means the conditions at which the photovoltaic (PV) modules comprising the Project are tested to determine the module nominal power output and performance characteristics. The Standard Test Conditions are defined to be 1000 W/m<sup>2</sup>, a relative air mass of 1.5, and 25°C cell temperature.

**“Subcontractor”** means any Person, such a subcontractor, vendor or supplier of any tier that provides any part of the Work for the EPC Contractor.

**“Substantial Completion”** shall have the meaning ascribed thereto in Article 8.

**“Substantial Completion Date”** means the date on which Substantial Completion occurs.

**“System Performance Guarantees”** are defined in Article 9.

**“System Performance Test”** means the test(s) conducted in accordance with the Scope of Work and Exhibit M in order to determine whether the Project has achieved Substantial Completion.

**“Third Party Screener” or “TPS”** is defined in Article 68.

**“Time Change”** is the enlargement of time allotted to reach Substantial Completion, which shall be reflected in a change to the Guaranteed Substantial Completion Date, necessitated by a Change Trigger Event that has made the achievement of the Guaranteed Substantial Completion Date impossible. No Time Change shall be granted to the extent of EPC Contractor’s act, omission, negligence, breach of this EPC Contract, or failure to take adequate measures to mitigate or alleviate the impact or effect of such Change Trigger Event. No Time Change shall be in excess of the minimum period necessary to overcome the effects of the Change Trigger Event in question.

**“Unescorted Access”** is defined in Article 68.

**“Unforeseen Site Conditions”** means any natural or manmade subsurface condition, underground voids, caves or groundwater, Antiquities, flora or fauna protected by Law, or Hazardous Materials on the Site.

**“Warranty Period”** is defined in Article 13.

**“Workmanship LC”** is defined in Article 20.

**“Work”** means any labor, supervision, technical advice, work direction, design, testing, inspection, engineering, services (including, without limitation, planning and preparation, training, materials management, disposal, or remediation) or Materials or other item or service of any type necessary or desirable for the design, engineering, procurement, construction, testing, start up and commissioning the Project in accordance herewith

“**Workmanship LC**” means the irrevocable standby letter of credit in substantially the form of Exhibit P.

### **ARTICLE 3. AGREEMENT**

1. The Company objects to any different or additional terms and conditions other than those contained in this EPC Contract. This EPC Contract is expressly conditioned on the EPC Contractor’s assent to the terms and conditions stated herein.

2. This EPC Contract is divided into articles, sections and paragraphs, which are titled and numbered for convenience only. It is not to be inferred that this is a complete or correct segregation of the several divisions of Work to be performed. The Company shall not be liable for omission or duplication of items of Work by the EPC Contractor or any Subcontractor, as a result of real or alleged error in arrangement of matter in this EPC Contract.

3. Should the EPC Contractor find any error, omission, inconsistency, ambiguity, or other discrepancy in this EPC Contract, the EPC Contractor shall provide written notice to the Company within three (3) Days of such discovery. The EPC Contractor represents that prior to submitting any bid or proposal for the Work, it received and carefully read and compared all parts of this EPC Contract and found them to be complete, accurate, consistent, and appropriate for the Work. **THE COMPANY MAKES NO REPRESENTATION AND DISCLAIMS ANY GUARANTEE OR WARRANTY WHATSOEVER, WHETHER EXPRESS OR IMPLIED, REGARDING THE CONTENTS OR ARRANGEMENT OF THIS EPC CONTRACT.** The EPC Contractor shall be under a continuing duty to read carefully and compare the parts of this EPC Contract.

4. The Company shall have the right to issue written clarifications to this EPC Contract. Under no circumstances shall Company be liable for any oral clarifications, instructions, or interpretations.

### **ARTICLE 4. STANDARDS**

1. The EPC Contractor shall provide all Work in strict accordance with this EPC Contract with a high degree of care, skill, diligence, professional knowledge, judgment and expertise, according to sound work practices and accepted professional and industry standards commonly used by reputable professional engineering and construction firms performing engineering and construction services in the United States solar industry for facilities of the type and size similar to the Project, in a well-managed, organized and efficient manner and to the entire satisfaction of the Company. All Work provided by the EPC Contractor shall be subject to review and comment by the Company.

2. The EPC Contractor shall be responsible for the professional design, engineering, construction and construction management of the Work, and shall provide to Company professional engineering certifications upon request. The omission of design services from the Scope of Work (a) shall not relieve the EPC Contractor from furnishing such design services and (b) shall not constitute a basis for a Change Request or Change Order.

3. Unless otherwise expressly specified herein, all Material provided hereunder shall be of new manufacture, tested and installed in part and in whole, in accordance with (a) the last applicable published and other recognized codes, specifications and standards, (b) the Permits, and (c) Land Use Agreements.

4. The EPC Contractor shall (a) perform the Work (including the engineering, design and construction of the Project) and all Materials furnished hereunder, in compliance with the requirements of this EPC Contract and all applicable Law, (b) provide all necessary code stamps, nameplates, tests, inspections and certifications required by the EPC Contract and all applicable Law; and (c) perform the Work such that the Project will fully comply with and be capable of operation in accordance with the requirements of this EPC Contract and all applicable Law.

#### **ARTICLE 5. EPC CONTRACTOR RESPONSIBILITIES**

The EPC Contractor shall, at its own expense, do everything necessary to complete the Work including:

1. perform all Work continuously and diligently in accordance with all applicable Law, Permits, existing Site limitations, and the Project Schedule;
2. provide any information that the Company may reasonably request to verify actual progress and predict future progress of the Work;
3. provide specifications, plans, drawings, engineering and design of the Project, which shall be consistent with the design and equipment parameters set forth in this EPC Contract and applicable Law and perform the Work in accordance with such standards, specifications, engineering, design and construction requirements;
4. procure and supply all Materials (unless expressly specified otherwise herein), supplies and services for the Project and the engineering, design, construction, commissioning and testing thereof, all in accordance with this EPC Contract;
5. provide or obtain all utilities necessary for the construction of the Project;
6. deliver to the Company copies of all executed contracts with Subcontractors;
7. deliver to the Company for the Company's approval, at least thirty (30) Days before commissioning occurs, the EPC Contractor's proposed commissioning procedures for the Project;
8. provide all services and Materials for the execution of the Work;
9. provide all construction tools and equipment, other tools, office facilities, telecommunications and other items required to complete the Project and achieve Final Acceptance;

**10.** clear and inspect the Site, dispose of all debris and fill at its own expense, and construct the Project, including all civil, electrical, mechanical, and controls, works, foundations, and structures;

**11.** transport to the Site, receive, unload, store and secure at the Site, all Materials and other components of the Work;

**12.** obtain and maintain all the EPC Contractor Permits;

**13.** provide all necessary technical support and timely prepare all documentation and the application (including engineering and design information) related to the Work required by the Company in order for the Company to obtain and maintain the Company Permits and the Land Use Agreements consistent with the Project Schedule;

**14.** provide all other services that are specified in, or may be reasonably inferred from, this EPC Contract;

**15.** provide to the Company a list of recommended spare parts for the Project;

**16.** give the Company ten (10) Days' prior written notice before the commencement of the System Performance Test;

**17.** comply with all applicable interconnection requirements, and the Land Use Agreements;

**18.** prepare and deliver weekly progress reports in a form acceptable to the Company for review and comment;

**19.** support the Company by providing periodic status updates and reports to Governmental Authorities and third parties as may be required;

**20.** maintain in good order at the Site all necessary documentation related to the performance of the Work, including at least one (1) record copy of the design and engineering documents, project execution plans, drawings, construction procedures, quality assurance manuals, drawings, specifications, product data, samples, and modifications, marked currently to record changes made during construction, all of which will be available to the Company for inspection and use at all times;

**21.** promptly notify the Company in writing if the EPC Contractor believes that the Guarantees will not be met, and shall specify in such notice the basis for such belief, and the corrective action to be taken by the EPC Contractor; and

**22.** If requested by the Company, during start-up and testing prior to final acceptance, EPC Contractor shall maintain qualified personnel to support the operation and maintenance of the Project.

**ARTICLE 6. SUBSTANTIAL COMPLETION**

**1.** Substantial Completion shall occur when the Company has confirmed that all of the following conditions have been satisfied or waived in writing by the Company:

- a.** EPC Contractor has installed all equipment in accordance with manufacturers' requirements and the requirements of this EPC Contract and all applicable pass-through warranties, as identified on Exhibit L attached hereto, have been properly assigned and delivered to the Company;
- b.** EPC Contractor has completed all Work necessary to permit safe and reliable generation and transmission of electrical power and in accordance with the Scope of Work and design specifications;
- c.** the Punch List has been agreed upon and accepted in writing by the Company;
- d.** all Work has been completed in accordance with Law, the Land Use Agreements, and all building, electrical and code inspections required by the local electric distribution company or Law have been successfully completed and applicable certifications have been obtained;
- e.** EPC Contractor has delivered the following documents to Company in a format consistent with this EPC Contract: (i) all vendors' and other manufacturers' instructions, tests and certified drawings relating to Materials; (ii) QA/QC and other test and inspection certificates and reports applicable to the Work; (iii) Specifications and Drawings (current as of such time); (iv) construction turnover packages; and (v) Project operating procedures and manuals, including all applicable system operations and maintenance manuals;
- f.** EPC Contractor has replaced or refilled any consumables and spare parts consumed during commissioning and testing;
- g.** EPC Contractor has successfully completed all activities in the construction and testing phases, as more particularly described in this EPC Contract;
- h.** EPC Contractor has paid in full all Delay Liquidated Damages;
- i.** the Project has successfully passed the System Performance Test;
- j.** the medium voltage infrastructure and the grid connection for the Project are mechanically, electrically and functionally complete, the Project is interconnected with the local electric distribution company, and the Project is operating and producing electricity in a manner consistent with this EPC Contract; and

- k. the NJBPU or its designee has certified that the Project is qualified to generate SRECs based on the electrical output of the Project.

2. The EPC Contractor shall issue a Certificate of Substantial Completion, substantially in the form of Exhibit J, to the Company including such operating data, documentation, and certifications as necessary to verify that the conditions for Substantial Completion in Section 6.1 have been met. Within thirty (30) Days thereafter, the Company shall either notify the EPC Contractor that Substantial Completion has not occurred (along with the reasons supporting such conclusion) or accept and countersign the Certificate of Substantial Completion.

3. If Substantial Completion has not occurred, the EPC Contractor shall perform all necessary Work for Substantial Completion, and the foregoing notice procedure shall be repeated until Substantial Completion occurs at which time Company shall accept and countersign the Certificate of Substantial Completion.

4. The Company may, at its option, place the Project into operation prior to the Substantial Completion Date, which shall not constitute acceptance of the Work or an acknowledgement that the Substantial Completion Date has occurred. The EPC Contractor shall cooperate with Company and allow the Company sufficient access to the Project so that it may operate the Project.

5. The EPC Contractor shall continue the Work until Substantial Completion has been achieved.

#### **ARTICLE 7. FINAL ACCEPTANCE**

1. Final Acceptance shall occur when all of the following conditions have been satisfied:

- a. the Company has issued a Certificate of Substantial Completion;
- b. the Site is free of construction debris;
- c. all items on the Punch List have been completed;
- d. no Change Requests are pending;
- e. EPC Contractor has provided six (6) hard copy sets of the final Project as-built documentation including:

\*All as-built engineering drawings and specifications

\*Vendor Drawings and Data

\*Instruction Manuals

\*Installation, Operation and Maintenance Manuals

\*All Permits with copies of close-out records as required

\*Control system software.

\*Spare Parts Lists

- f.** EPC Contractor has provided one (1) CD of the electronic as-built documentation, including executable CADD files and “.pdf” versions of all design drawings;
- g.** EPC Contractor has provided six (6) copies of an as-built Site survey documenting the Solar Project as-built conditions in relation to the Site, easement areas and right of way areas;
- h.** EPC Contractor has paid in full all Liquidated Damages due and owing;
- i.** EPC Contractor has delivered to the Company an Affidavit of Payment and Final Release in the form set forth in Exhibit E;
- j.** EPC Contractor has delivered to the Company a release and waiver of Liens from each Subcontractor who performed Work or is otherwise entitled by Law to file a Lien and such other documentation as Company may reasonably request;
- k.** EPC Contractor has completed all Work;
- l.** EPC Contractor has removed all of its construction equipment, material and support personnel from the Site; and
- m.** EPC Contractor has delivered to the Company the Workmanship LC or has escrowed funds in accordance with Article 20.2.

**2.** Company’s acceptance or rejection of any Punch List item shall not relieve the EPC Contractor of its obligation to complete the Project. Company shall have the right, without additional cost to Company, to suspend or delay Work on any items on the Punch List at any time that Company determines such Work may adversely affect its operation of the Project, in which case Company and the EPC Contractor shall coordinate with each other to schedule the timely completion of the items on the Punch List so as to minimize disruption of the Project’s operations.

**3.** The EPC Contractor shall issue a Certificate of Final Acceptance, substantially in the form of Exhibit K, to the Company including such operating data, documentation, and certifications as necessary to verify the conditions for Final Acceptance contained in Section 7.1 have been met. Within thirty (30) Days thereafter, the Company shall either notify the EPC Contractor of why Final Acceptance has not occurred (along with the reasons supporting such conclusion) or accept and countersign the Certificate of Final

Acceptance. The Final Acceptance Date shall be the first date on which all conditions for Final Acceptance were satisfied.

4. The EPC Contractor shall perform all necessary Work to achieve Final Acceptance, and the foregoing notice procedure shall be repeated until Final Acceptance occurs at which time Company shall issue a Certificate of Final Acceptance.

5. The EPC Contractor shall continue the Work until Final Acceptance has been achieved.

#### **ARTICLE 8. SCHEDULE GUARANTEE**

1. Substantial Completion shall occur on or before the date that is *[tbd]* Days after the date on which the EPC Contractor has received all Permits necessary to begin construction, which date shall be known as the “Guaranteed Substantial Completion Date.” If the Substantial Completion Date does not occur on or before the Guaranteed Substantial Completion Date, then the EPC Contractor shall pay Company liquidated damages in the amount of \$1,100 per megawatt of system capacity (as measured in direct current, pro-rated on a kilowatt basis) (the “Delay Liquidated Damages”) for each Day following the Guaranteed Substantial Completion Date until the Substantial Completion Date.

2. Company shall issue an invoice to the EPC Contractor for Delay Liquidated Damages and EPC Contractor shall pay any Delay Liquidated Damages no later than ten (10) Days after receipt of the invoice.

3. Company and EPC Contractor acknowledge and agree (a) that Company will suffer significant damages and substantial financial loss if the Project fails to achieve Substantial Completion by the Guaranteed Substantial Completion Date and such damages and financial losses will be difficult to calculate precisely and (b) the Delay Liquidated Damages are fair and reasonable, are not penalties, and reflect the Parties’ assessment and estimate of such damages and financial losses. In light of the foregoing and the equal bargaining power of the Parties, the EPC Contractor accepts and agrees to the Liquidated Damages as liquidated damages.

4. Notwithstanding the EPC Contractor’s payment of Delay Liquidated Damages, the EPC Contractor shall complete the Work and achieve Final Acceptance.

#### **ARTICLE 9. SYSTEM PERFORMANCE GUARANTEES**

1. As a condition of Substantial Completion, EPC Contractor shall conduct the System Performance Test in accordance with the Scope of Work and Exhibit M. The Project shall achieve an acceptance test performance ratio (“ATPR”) of 85.0% or better in order to achieve Substantial Completion.

2. If EPC Contractor fails to meet or exceed the ATPR, EPC Contractor shall pay liquidated damages (“Performance Liquidated Damages”) in the amount equal to the guaranteed output of the Project *minus* the actual output, *divided by* the guaranteed output (as measured in alternating current) *multiplied by* EPC Contract Price *multiplied by* two (2).

3. On the one year anniversary of the Substantial Completion Date, the EPC Contractor shall perform the Availability Factor Test for the Project as described in Exhibit R.

4. If EPC Contractor fails to pass the Availability Factor Test, EPC Contractor shall pay liquidated damages (“Availability Liquidated Damages”) described in Exhibit R.

5. Company shall issue an invoice to the EPC Contractor for Performance Liquidated Damages and Availability Liquidated Damages, and EPC Contractor shall pay such Liquidated Damages within ten (10) Days after receipt of the invoice.

6. Company and EPC Contractor acknowledge and agree (a) that Company will suffer significant damages and substantial financial loss if the Project fails to pass the Performance Test or Availability Factor Test and such damages and financial losses will be difficult to calculate precisely and (b) the Performance Liquidated Damages and Availability Liquidated Damages are fair and reasonable, are not penalties, and reflect the Parties’ assessment and estimate of such damages and financial losses. In light of the foregoing and the equal bargaining power of the Parties, the EPC Contractor accepts and agrees to the Performance Liquidated Damages and Availability Liquidated Damages as liquidated damages.

**ARTICLE 10. EPC CONTRACTOR INSPECTION**

1. The EPC Contractor (a) has inspected the Site and surrounding premises where the Work is to be performed, and (b) is satisfied with the conditions under which it will perform the Work or any matter that could affect the Work. The EPC Contractor acknowledges that the Site is a former landfill, has conducted an investigation of the facts and circumstances around the closing of the landfill, and represents and warrants that (i) the landfill was properly closed in accordance with Law, and (ii) the Site is suitable for the purpose of siting the Project. No allowances shall be made if the EPC Contractor has failed to adequately inspect the Site or surrounding premises.

2. The EPC Contractor (a) has ascertained all the facts concerning conditions found at the location of the Work, including all physical characteristics above, on and below the ground, and (b) understands all of the technical, administrative, organizational, procedural, legal, regulatory and other obstacles and constraints associated with constructing the Project on the Site. The Company shall have no responsibility with respect to ascertaining for the EPC Contractor facts concerning physical or other characteristics or constraints at the Site.

**ARTICLE 11. CHECKED DIMENSIONS**

1. The EPC Contractor shall check all quantities and dimensions provided by the Company, and shall be responsible for any errors which can be discovered by examination or checking of this EPC Contract. The EPC Contractor shall be responsible for the joining and fitting of all parts of the Work, and any oversight or inspection by the Company shall not relieve the EPC Contractor of any responsibility under the EPC Contract.

**ARTICLE 12. EPC CONTRACTOR'S DRAWINGS**

1. Upon request, the EPC Contractor shall furnish prints of shop or detailed drawings for the Company's review and comment, and shall address any such comments to the Company's satisfaction before fabrication of any part of the Work is commenced.

2. The review and comment of such shop, detail or other drawings by the Company is not to be construed as a complete check of the drawings or of the sufficiency of design, and shall not reduce the responsibility of the EPC Contractor to complete the Project in accordance with this EPC Contract.

3. The EPC Contractor shall furnish such prints of drawings as may be required for records, inspection, or general superintendence of the Work, and for any use in connection with the Work. Reproducible tracings shall be furnished when requested by Company.

**ARTICLE 13. WARRANTY AND CORRECTION OF WORK**

1. The EPC Contractor warrants that for five (5) years from the date of Substantial Completion (the "Warranty Period"), all Work including Materials provided by the EPC Contractor or any of its Subcontractors shall: (a) be of high quality and be free from any defects or deficiencies; (b) be suitable for the intended purposes; (c) result in dependable service and performance as specified in, or which may reasonably be inferred from, this EPC Contract; (d) comply with current industry codes and standards and sound engineering and work practices in the U.S. solar industry; (e) comply with all applicable Law and the Land Use Agreements; (f) not violate any patent, copyright, or other proprietary interest; (g) achieve the System Performance Guarantees; (h) otherwise fully conform in all respects to the EPC Contract, and (i) shall be new and free from any Lien.

2. During the Warranty Period, the EPC Contractor shall, without expense to the Company, promptly repair, replace, or re-perform any Work, including Materials in whole or in part, which fails to conform to the Warranty or EPC Contract, and the EPC Contractor shall also bear the expense of making good all Work of either the Company or other contractors which is impaired, destroyed, or damaged by such repair, replacement, or re-performance. All Warranty work shall be warranted for the longer of (a) the original remaining Warranty period, or (b) two (2) additional years from the date of completion of such repair, correction, replacement or re-performance.

3. The EPC Contractor shall, within three (3) Days of receiving notice from the Company, repair, correct, replace, re-perform and retest any Work that fails to conform to this EPC Contract at no additional cost to the Company. The EPC Contractor shall perform the repairs, rectification, replacements and corrective Work required hereunder in conjunction with the operations schedule of the Project. Neither Final Acceptance nor final payment shall relieve the EPC Contractor of its responsibility to provide conforming Work.

4. If (i) an emergency exists or (ii) if the EPC Contractor does not diligently correct a warranty item within three (3) Days after written notification thereof by the Company, the Company shall have the right, at its option and the EPC Contractor's sole cost, to repair,

replace, or correct such nonconforming Work, provided further that the Company may, at its option, take a credit for the costs and expenses thereof against the Contract Price, including applying to such costs and expenses any or all Retainage then held by the Company (or drawing under the Retainage LC, if one has been posted, and/or Performance LC). If the Retainage and/or the drawing under the Retainage LC then held is insufficient to cover such costs and expenses, the EPC Contractor shall pay the excess of such costs and expenses to the Company within five (5) Days following written demand therefor. If the Company elects to perform any repair, replacement or correction of such nonconforming Work, such performance shall not affect the EPC Contractor's warranty on any other part of the Work or portions or components thereof.

5. The liability of the EPC Contractor shall extend to all damages caused by the breach of any of the foregoing warranties and shall include, but not be limited to, the cost of removal and replacement of nonconforming Material, correction of its Work, and the cost of removal and reinstallation of other material or work made necessary thereby.

6. Acceptance by Company of the EPC Contractor's quality assurance/quality control program shall not be construed to diminish the EPC Contractor's obligations under this Contract.

7. EPC Contractor shall assign to the Company the applicable pass-through warranties from the Major Equipment Vendors as set forth in Exhibit L. The solar panel warranty shall be consistent with a minimum peak power generated at Standard Test Conditions, which will be no less than the nominal power output ratings set forth in the applicable panel manufacturer warranty and shall include the following: (a) the modules will be free from defects in materials and workmanship under normal use, installation, operation and service for a period of five (5) years, and (b) the modules will have a power output guarantee of 90% of the nominal output power rating during the first ten (10) years and 80% for the first twenty-five (25) years. The inverter warranty shall ensure that the inverter is free from defects in materials and workmanship under normal use, installation, operation and service for a period of at least ten (10) years.

#### **ARTICLE 14. ASSIGNMENT**

1. The EPC Contractor shall not assign or delegate its rights or obligations under this EPC Contract (including without limitation by way of merger or operation of law) or any part thereof to any Person, without the prior written consent of the Company. Any purported assignment or delegation in violation of this Agreement shall be null and void *ab initio*.

2. The Company may, without the consent of the EPC Contractor, (i) assign or create a security interest in its rights and interest under or pursuant to this EPC Contract, the Project, any movable property of Company or any other rights or assets of Company in favor of any Financing Party and (ii) upon prior written notice to the EPC Contractor, assign this EPC Contract or its rights or obligations hereunder to any affiliate or joint venture of the Company.

**ARTICLE 15. LIENS**

1. In consideration of any payments, whether full, partial, or disputed, made by EPC Contractor hereunder, the EPC Contractor hereby (and on behalf of its Subcontractors) waives and forever releases Company, Host and their real property from any past, present, or future Lien based, in whole or in part, or any Work, services, materials, or equipment provided or to be provided, under this EPC Contract. The EPC Contractor shall: (a) keep (and shall ensure that each Subcontractor keeps with respect to its portion of the Work) the Project, the Site, and the Materials free and clear of any Lien, (b) secure the discharge of any Lien in respect of Work for which the EPC Contractor has been paid within thirty (30) Days of its obtaining notice thereof, or in the alternative, bond off the Lien, and (c) pay all costs and expenses, including bonding costs and legal fees, in connection with any Claim resulting from the EPC Contractor's breach of the foregoing provisions.

2. In the event that any Lien is filed against the Company, the Host or the Site by any Subcontractor, then the EPC Contractor, at no cost or expense to the Company, shall immediately: (a) pay the claimant thereof and obtain a discharge thereof from the claimant, or cause the Lien to be discharged by filing a surety bond or making a deposit of funds in the manner required by law; and (b) take any and all other steps which may be necessary to resolve and discharge any such Lien.

3. The EPC Contractor shall indemnify and hold harmless the Company from and against any Loss due to any Lien or Claim made or filed by any Subcontractor.

4. The EPC Contractor shall, at the Company's option and at the EPC Contractor's own cost and expense, defend the Company against any Claim premised upon any Lien or Claim made or filed by any Subcontractor which in whole or in part, are based on any work, services, materials, or equipment provided or to be provided under this EPC Contract.

**ARTICLE 16. INDEMNIFICATION**

1. General. The EPC Contractor's obligation to defend, indemnify, and hold harmless under the provisions of this Article shall exclude only those instances which are the result of the Company's intentional and deliberate misconduct or where the personal injury, death, occupational disease or loss or damage to real or personal property was solely the result of the Company's negligence.

2. Losses and Damage.

(a) The EPC Contractor shall defend, at the Company's option and at the EPC Contractor's own cost and expense, and shall indemnify and hold harmless each Company Person from and against any Loss due to personal injury, death, or occupational disease of any person (including any of the EPC Contractor's or any Subcontractor's employees or agents) and/or loss or damage to any real or personal property; which directly or indirectly arises out of or results from or is caused in whole or in part by any act or omission, willful misconduct or negligent, reckless or tortuous act or omission of the EPC Contractor and/or any of its Subcontractors.

(b) The EPC Contractor shall defend, at the Company's option and at the EPC Contractor's own cost and expense, and shall indemnify and hold harmless each Company Person from and against any Loss due to (i) the failure of the EPC Contractor or its Subcontractors to comply with Land Use Agreements, which in whole or in part arise out of, relate to, result from, or are connected with the performance of any Work; (ii) the EPC Contractor's and/or Subcontractors' use, operation, or possession of any Materials; (iii) the nature or condition of the Site, (iv) premises or facilities where any Work was provided; and/or (v) the EPC Contractor's or any Subcontractor's failure to provide adequate preventative and protective measures, safeguards or devices.

(c) The EPC Contractor shall defend each Company Person against any Claim which, in whole or in part, actually or allegedly arises out of, relates to, results from, or is connected with any Loss or any violation hereunder by the EPC Contractor or any of its Subcontractors. For purpose of fulfilling its duties to defend, indemnify and hold harmless each Company Person, the EPC Contractor waives the immunities, rights, or defenses which may be available under applicable worker's compensation laws.

**3. Compliance With Law.** The EPC Contractor shall comply with all applicable Law (and any Change-in-Law), and the requirements of all commissions, boards, bodies, and agencies having jurisdiction over the Company, any EPC Contractor Person, Work, or over or with respect to any persons or entities employed in the provision of Work. The EPC Contractor shall indemnify and hold harmless each Company Person from and against any and all Losses which in whole or in part arise out of, relate to, result from, or are connected with any violation thereof by the EPC Contractor or any of its Subcontractors. The EPC Contractor shall, at the Company's option and at the EPC Contractor's expense, defend the Company against any and all Claims whether just or unjust, which in whole or in part actually or allegedly arise out of, relate to, result from, or are connected with any such violation by the EPC Contractor or any of its Subcontractors, provided that the EPC Contractor shall not settle or make a plea with respect to any proceeding without the Company's prior written consent.

**4. Patent, Copyright And Proprietary Interests.** The EPC Contractor shall not infringe upon or violate any patent, copyright, service mark, trademark, trade secret or any other proprietary interest of any kind of any Person. The EPC Contractor shall indemnify and hold harmless the Company from and against any and all Losses due to any infringement or violation of any proprietary interest which in whole or in part, arise out of, relate to, result from, or are connected with any infringement or violation thereof. The EPC Contractor shall, at the Company's option and at the EPC Contractor's expense, defend the Company against any and all Claims, whether just or unjust, that any Work invention, mark, name, diagram, drawing, design, apparatus, process, or work of authorship, or any part thereof, provided under this Contract, or that the use of any such item or part thereof, constitutes an infringement or violation of any proprietary interest. If the use of such item or any part thereof shall in any suit or proceeding be held to constitute an infringement or violation of any proprietary interest and the use thereof be enjoined, the EPC Contractor shall, at its sole expense, either: (x) procure for Company the right to continue to use such item, or part thereof; (y) replace it with non-infringing or non-violating items; or (z) so modify the item that it becomes non-infringing or non-violating. Any substituted non-infringing or non-violating items shall, in the Company's judgment, be in quality and performance equal to or better than the items replaced. To the extent that the EPC Contractor

has a patent, copyright, or other such proprietary interest in any Work to be provided under the EPC Contract, the EPC Contractor hereby grants Company an irrevocable, perpetual, nonexclusive, royalty-free, license to reproduce, distribute, and use such Work, including the preparation of derivative works in connection with, the ownership, operation, use or maintenance of the Project.

5. In any and all claims against Company by any employee of the EPC Contractor or any employee of any Subcontractor or by anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation stated herein shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the EPC Contractor or any Subcontractor under any applicable workers' compensation Law, disability Law or any other Law.

6. The EPC Contractor shall defend, in good faith and at its expense, subject to the provisions of this Article 16, any claim or demand set forth in a Notice of Claim relating to a third-party claim that is properly indemnifiable hereunder or that the EPC Contractor disputes but elects to defend (and reserve for subsequent determination whether properly indemnifiable hereunder), and the Company, at its expense, may participate in the defense. Within thirty Days after receipt of a Notice of Claim, the EPC Contractor must notify the Company in writing to confirm that the EPC Contractor is proceeding with the defense of the third-party claim as required hereunder. The Company may not settle or compromise any third-party claim as long as the EPC Contractor is defending it in good faith and is diligently conducting such defense. If the EPC Contractor does not so notify the Company that the EPC Contractor is proceeding with the defense of the third-party claim, the Company may undertake its defense, and the EPC Contractor will be bound by the result obtained by the Company through settlement or judgment and is precluded from arguing that Company's defense costs are unreasonable.

7. Except as otherwise provided herein, neither party, without prior written consent of the other Party, shall enter into any settlement of any third-party claim unless (i) there is no finding or admission of any violation of legal requirements or any violation of the rights of any Person and no effect on any other claims that may be made against the other Party or its Group (as used herein, "its Group" shall refer to the Company or EPC Contractor, as the case may be) or the settlement includes a complete and unconditional release of the Company and its Group with respect to the third-party claim, (ii) the sole relief provided is monetary damages that are paid in full by the settling Party, and (iii) the settlement would not lead to liability or create any financial or other obligation on the part of the other Party or its Group. If a firm offer to settle a third-party claim is made by the Person bringing such third-party claim without leading to liability or the creation of a financial or other obligation on the part of the Company or its Group and the EPC Contractor desires to accept and agree to such offer, the EPC Contractor may give notice to the Company to that effect. If the Company fails to consent to such firm offer within fifteen (15) Days after its receipt of such notice, the Company may continue to contest or defend such third-party claim and, in such event, the maximum liability of the EPC Contractor with respect to such third-party claim will be the amount of such settlement offer, plus all costs and expenses paid or incurred by the Company up to the end of such fifteen (15) Day period.

8. If the EPC Contractor breaches any representation or warranty hereunder, the EPC Contractor shall indemnify, defend, hold harmless and otherwise protect the Company's interests as set forth in the EPC Contract.

#### **ARTICLE 17. INSURANCE**

1. The EPC Contractor shall provide, at its sole cost and expense, the insurance set forth in Exhibit Q from the start of the Work until the Substantial Completion Date.

2. The EPC Contractor shall promptly notify the Company of any actual or potential insurable claim in excess of fifty thousand dollars (\$50,000).

3. The insurance companies shall have no recourse against any insured party for the payment of any premiums or assessment under any policy if such insured party is not responsible for maintaining such insurance under this EPC Contract.

4. The insolvency or bankruptcy any insurance company shall not excuse the EPC Contractor from its obligations to obtain insurance as herein required. If a required policy is cancelled, or upon the insolvency, bankruptcy or failure of any such insurance company, the EPC Contractor shall promptly obtain new insurance policies in the amounts and coverage required hereby.

5. Any insurance which any EPC Contractor Person may carry shall be secured and maintained at its own expense. Any such policies of insurance shall contain waivers of subrogation. All deductibles under any policy required to be carried hereunder shall be the responsibility of the EPC Contractor irrespective of any negligence of the Company.

#### **ARTICLE 18. SAFETY MEASURES**

1. The EPC Contractor shall take all precautions necessary to protect from personal injury, death or occupational disease all workers and other persons who may be on or about the Site or surrounding premises where Work is being performed. The EPC Contractor shall (i) submit to Company for pre-approval a health and safety plan, and (ii) designate in writing to the Company the EPC Contractor Safety Representative for the Site and surrounding premises where the Work is performed.

2. The EPC Contractor shall solely be responsible for the safety of all persons working at the Site or who enter the Site for any purpose until the Substantial Completion Date. The EPC Contractor shall ensure that all the EPC Contractor Persons comply with, and use reasonable efforts to provide that all Company Persons comply with, all applicable Law relating to health and safety. The EPC Contractor shall undertake all reasonable measures to prevent vandalism, theft, and danger to the Project, the Site, Equipment, and personnel. EPC Contractor shall be responsible for any loss or delay resulting from the failure to provide the foregoing. Without limiting the generality of the foregoing, the EPC Contractor shall: (a) take reasonable precautions to prevent injury to all persons on the Site and arrange to have first aid administered to all persons who are injured or become ill on the Site, and promptly report all accidents and injuries to Company; (b) provide sufficient light for all Work; (c) make contact

with the local fire department, police department, and hospital (the “Emergency Entities”) and be aware of local emergency response procedures.

**3.** The Company shall have the right to stop Work whenever, in the Company’s judgment, environmental issues, safety violations or other conditions or circumstances exist that could result in personal injury, death, occupational disease or damage to property and the EPC Contractor shall bear all costs and expenses related to such stoppage of Work. At the request of Company, the EPC Contractor shall remove those persons responsible for the safety violations from the Site. The EPC Contractor’s failure or refusal to correct safety violations shall entitle the Company to terminate this EPC Contract for cause.

**4.** The EPC Contractor shall perform all Work in compliance with (a) a Site-specific Health and Safety Plan proposed by the EPC Contractor and approved by the Company, and (b) all applicable Law including OSHA. The EPC Contractor shall determine and promptly advise the Company if the Work requires compliance with OSHA regulation (x) “Occupational Exposure To Bloodborne Pathogens” (29 CFR 1910.1030), or (y) Hazardous Waste Operations and Emergency Response (“HAZWOPER”) regulations (29 CFR 1910.120). The EPC Contractor shall inform all its employees and Subcontractors of any potential biohazard and ensure that universal precautions are exercised in the handling of such materials to prevent or eliminate this potential.

**5.** The EPC Contractor shall (a) immediately notify Company’s project manager by telephone upon the occurrence of any Incident, (b) deliver to Company a written report within 24 hours of any Incident describing the nature and cause of the Incident, and EPC Contractor’s response to the Incident, and (c) a copy of all reports made to Governmental Authorities or insurance companies relating to any accident or injury occurring during the performance of the Work within 24 hours of their submission.

**6.** No Material incorporated into the Work shall contain (a) asbestos except as permitted by EPA Regulations (40 CFR 763.145), or (b) Hazardous Materials.

**7.** All trucks, vehicles, equipment, machinery, or the like provided by the EPC Contractor shall be in safe operating condition and at all times shall be properly protected, maintained, and safely operated.

**8.** The EPC Contractor shall perform appropriate drug testing on all EPC Contractor persons having access to the Site. The EPC Contractor shall adopt a drug and alcohol abuse policy that conforms to the Company’s policies on alcohol and drug abuse.

**9.** EPC Contractor shall follow good construction practices, including dust monitoring and control. EPC Contractor shall have a person on Site with the requisite training and experience to observe on Site activities and assess the need for additional worker protections.

#### **ARTICLE 19. PROTECTION OF WORK AND PROPERTY**

**1.** The EPC Contractor shall assume the risk of loss or damage to real or personal property and to all Work, including Materials delivered to Contractor or accepted at

point of storage by Contractor until the later of the Substantial Completion Date or the date the Work is accepted by the Company.

2. The EPC Contractor shall take all precautions necessary to protect all Materials provided, owned, leased, or rented from any loss or damage to same due to fire, theft, accident, failure of parts, improper handling, incompetent operators, vandalism, strikes, depreciation, wear and tear, careless operation, neglect, failure to lubricate properly, or lack of protection from weather, and the EPC Contractor agrees that Company shall not be liable for any loss, repairs, or replacement made necessary by any or all such causes.

3. The EPC Contractor shall replace, repair or reconstruct, all at its expense and as promptly as possible, any portion or all of the Work that is lost, damaged or destroyed (including any damage or loss that has occurred as the result of a Force Majeure Excused Event) irrespective of how such loss, damage or destruction shall have occurred. Where acts or omissions of the EPC Contractor or its agents, employees, Subcontractors, or any of them results in damage to property, defective workmanship, or excessive cost of Work or any or all of them, the cost of correcting such damages, deficiencies, and excessive costs shall be borne by the EPC Contractor. If the Company has already paid the cost occasioned by such acts or omissions, it may withhold, deduct, or set off money due the EPC Contractor to reimburse the Company for such cost.

4. The EPC Contractor shall at all times perform its Work so as to assure the protection of the Company's or Host's property from loss or damage, and avoid causing interruption to the Work or operation of the Company's or Host's equipment or facilities. The EPC Contractor shall ensure that no neighboring land, property or property right is injured or damaged by the EPC Contractor's and its Subcontractors' activities.

#### **ARTICLE 20. CREDIT ENHANCEMENT**

1. Concurrently with the execution and delivery of this EPC Contract, the EPC Contractor shall deliver to the Company one or more of the following credit enhancements as determined by PSE&G's credit department:

- a. A performance bond and a payment bond from a surety rated no less than A- by AM Best and otherwise acceptable to Company in its sole discretion. The surety must retain this rating until the obligations of the surety to Company have been satisfied. The form of the Performance Bond and Payment Bond are attached as Exhibit T.
- b. A Performance LC issued by an Eligible Bank in a stated amount equal to ten percent (10%) of the EPC Contract Price which shall secure the payment, performance and discharge of all of the EPC Contractor's obligations under this EPC Contract including the failure to (a) pay Liquidated Damages, (b) discharge any Lien, and (c) indemnify the Company in accordance herewith. The Performance LC shall expire no earlier than thirty (30) Days after

the Final Acceptance Date. In lieu of providing a Performance LC, EPC Contractor shall deliver to the Company concurrently with the execution and delivery hereof cash collateral in an amount equal to ten percent (10%) of the EPC Contract Price ("Cash Collateral") to be used by the Company for the foregoing purposes. The Company shall return the Cash Collateral no later than thirty (30) Days after the Final Acceptance Date. The Cash Collateral shall be transmitted to Company by wire transfer pursuant to the following wire instructions:

Bank Name:

ABA:

Account:

- c. A Guaranty from a Guarantor in the form of Exhibit U guaranteeing Contractor's Work and its obligations under the Contract.

2. As a condition of Final Acceptance, the EPC Contractor shall deliver to the Company an irrevocable standby letter of credit in substantially the form of Exhibit P (the "Workmanship LC") issued by an Eligible Bank in a stated amount equal to two percent (2%) of the EPC Contract Price which shall secure the payment, performance and discharge of all of the EPC Contractor's obligations under this EPC Contract arising after Final Acceptance. The Workmanship LC shall expire no earlier than five years after the Final Acceptance Date. In lieu of the Workmanship LC, EPC Contractor shall have the option of providing cash in an amount equal to two percent (2%) of the EPC Contract Price to be held by the Company for five years for the foregoing purposes. The cash shall be delivered by wire transfer to a bank account designated by the Company.

3. EPC Contractor shall deliver its audited financial statements (which shall be in form and substance acceptable to Company) and the audited financial statements of the Guarantor (if any) to the Company as soon as reasonably practicable after the end of each fiscal year during the term of this EPC Contract, but in no event later than 120 days after the end of such year. Company shall perform an annual review of the audited financial statement and, if the Company determines that there has been a material adverse change in the EPC Contractor's or Guarantor's financial condition, the Company may request additional credit enhancements.

## **ARTICLE 21. INDEPENDENT CONTRACTOR**

1. The EPC Contractor's status shall be that of independent contractor. Neither the EPC Contractor nor any Subcontractor, nor any of their, employees, agents, or Subcontractors shall, for any reason or purpose, be deemed to be an agent, partner, or employee of the Company. This EPC Contract creates no rights or benefits between the Company and any person or entity other than the EPC Contractor. No Subcontractor shall be deemed a third party beneficiary of, or have any interest in, this EPC Contract.

2. The EPC Contractor represents that it is fully and properly experienced, qualified, licensed, organized, equipped, insured, and financed to provide the Work and that the EPC Contractor's employees are well-trained, experienced, qualified, competent, reliable, and trustworthy. Company shall rely on the organization, management, skill, cooperation, and efficiency of the EPC Contractor and its contractors to provide the Work conforming to the EPC Contract within the Project Schedule.

3. The EPC Contractor shall have full responsibility for all labor and employment matters for itself and its Subcontractors including the selection, hiring, discipline, supervision, control, compensation, benefits, labor relations, collective bargaining, payroll taxes and costs.

4. The EPC Contractor shall at all times be fully responsible for the acts or omissions of its employees, agents, or any other person or entity under its direction or control, including the acts or omissions of its Subcontractors and their employees, agents, or other person or entity under the Subcontractor's direction or control.

5. Any general superintendence, inspection, review, coordination, monitoring, and oversight by the Company or the exercise of any of the Company's rights under the Contract shall not relieve the EPC Contractor of any of its responsibilities under the EPC Contract.

## **ARTICLE 22. SUBCONTRACTORS AND VENDORS**

1. Prior to the start of Work, the EPC Contractor shall submit to the Company a list of subcontractors and vendors for Company's prior review and approval. The approval or rejection of any Subcontractor or vendor by the Company shall not relieve the EPC Contractor of any of its responsibilities under the EPC Contract nor shall it be the basis for additional charges to the Company.

2. The EPC Contractor shall bind every Subcontractor to the terms and provisions of this EPC Contract as far as it is applicable to the Subcontractor's work. The EPC Contractor shall provide the Company with copies of all executed subcontracts prior to Subcontractor's start of Work.

## **ARTICLE 23. FORCE MAJEURE**

1. "Force Majeure Excused Event" means, and shall be limited to, those events listed below and occurring in New Jersey or any areas within a 30 mile radius from the Site, which are outside of the asserting Party's control that materially and adversely affect the performance of a Party (other than payment obligations) hereunder: earthquake, volcanic eruption, landslide, famine, plague, epidemic, war, or adverse weather conditions, provided that the adverse weather conditions are of a magnitude which has not occurred within the past fifty (50) years, and provided further that the first ten (10) Days of any such weather related delays shall not be considered a Force Majeure Excused Event.

2. Force Majeure Excused Events shall not excuse a Party (i) if the failure to perform or delay is due to the non-performing Party's fault, negligence or lack of diligence; (ii)

if the Party asserting a Force Majeure Excused Event fails to provide notice as provided herein; (iii) to the extent that the Force Majeure Excused Event was caused or provoked by the asserting party (or any EPC Contractor Person in the case that the EPC Contractor is the asserting Party); (iv) if an experienced contractor could have foreseen and taken reasonable precautions to prevent such event or circumstance; (v) if such event or circumstance does not result in a delay to the critical path of Work; or (vi) where the Party asserting a Force Majeure Excused Event fails to fulfill its obligations as soon as reasonably possible after such Force Majeure Excused Event has been eliminated or has ceased to prevent the affected party from fulfilling its obligations.

3. If the Parties do not agree that a Force Majeure Excused Event has occurred, the burden of proof shall rest with the asserting Party. If a Force Majeure Excused Event has occurred, the EPC Contractor shall be entitled to a Time Change only.

4. The EPC Contractor shall, at its sole expense, use its best efforts to avoid and minimize delay resulting from a Force Majeure Event and shall keep the Company promptly informed of any event which may delay performance of the Work. Delay in the EPC Contractor's receipt of subcontracted portions of the Work, including Materials, for any reason shall not entitle the EPC Contractor to any Change or any other relief.

5. Within forty eight (48) hours from the beginning of any delay resulting from a potential Force Majeure Excused Event, the EPC Contractor shall provide a detailed written notice to the Company of the cause(s) of such delay. In a case of a continuing cause of delay, only one request shall be necessary.

6. Nothing contained herein shall preclude the EPC Contractor from holding any other contractor(s), subcontractor(s), or entity responsible for unreasonable or unjustifiable delays incurred by the EPC Contractor caused by such other contractor, subcontractor, or entity.

7. The EPC Contractor's full compliance with the requirements of this Article shall be a condition of receiving any Change and the EPC Contractor's failure to comply with these requirements shall constitute a waiver of any right to a Change or any other claim.

8. Nothing within this Article shall prevent the Company from exercising its termination or suspension rights under this EPC Contract.

#### **ARTICLE 24. EPC CONTRACTOR PERSONNEL**

1. The Key EPC Contractor Personnel are set forth in Exhibit S. No member of the Key EPC Contractor Personnel shall be replaced or reassigned from the Project without Company's prior written approval.

2. The EPC Contractor shall provide on-site management and supervision of the Work. The EPC Contractor shall provide supervisory personnel to be on location whenever and wherever Work is being performed and to ensure that all Work is being carried out in a safe and efficient manner and in accordance with this EPC Contract.

#### **ARTICLE 25. HAZARDOUS MATERIALS AND ANTIQUITIES**

1. The EPC Contractor shall be solely responsible for, and shall comply with all applicable Law with regard to: (i) managing the soils encountered during the Work, (ii) any Antiquity encountered during the Work, and (iii) remediating and disposing of Hazardous Materials encountered during the Work.

2. Promptly after discovering any material on the Site believed or considered to be a Hazardous Material or Antiquity, the EPC Contractor shall: (i) immediately report the condition to the Company before disturbing such materials; (ii) promptly present a plan for properly addressing the situation; and (iii) stop Work in any affected area as appropriate.

3. The EPC Contractor shall prepare and recommend a comprehensive health and safety plan to the Company which will address, among other things, (i) the removal and disposal of such Hazardous Material or preservation of such Antiquity, (ii) potential off-Site disposal sites, and (iii) identify Permits necessary to implement the plan. The Company shall review such recommendations and direct the EPC Contractor to implement a plan to address the existing condition. The EPC Contractor shall provide to the Company copies of all documents relating to such Hazardous Material, including hazardous waste manifests, approvals and/or authorizations from landfill or other treatment, storage or disposal facilities and all laboratory data.

#### **ARTICLE 26. DOCUMENT DELIVERY**

1. The EPC Contractor shall deliver all submissions required for the Company to timely comply with the requirements of Governmental Authorities, Permits, Laws, Land Use Agreements, or local utilities, all as dictated by the Project Schedule.

#### **ARTICLE 27. SEQUENCE OF WORK**

1. The EPC Contractor shall commence Work upon the execution of this Agreement. Notwithstanding the foregoing, the EPC Contractor shall not order or purchase the Long Lead Time Equipment until the later of the date (a) the Lease Condition Precedent or (b) any condition precedent set forth in the BPU Order is satisfied. In the event of a failure of one of the foregoing conditions precedent and the EPC Contract is terminated, the Company shall not be responsible for any costs, expenses or claims associated with Long Lead Time Equipment purchased prior to the satisfaction of the conditions precedent.

#### **ARTICLE 28. COORDINATION AND COOPERATION**

1. The EPC Contractor shall cooperate with the Company, Host, local utility, and other Company contractors, if any, to ensure that the Work and their work is properly performed on schedule. The EPC Contractor shall collaborate with any other contractors and coordinate the Work with the work of such other contractor(s), if any, which could affect the Work, and the EPC Contractor shall proceed in such manner as not to interfere or delay the progress of the work as a whole.

2. If any part of the Work depends for proper execution or results upon the work of local utility, or any other contractor, the EPC Contractor shall inspect and promptly report in writing to the Company any defects in such work that renders it unsuitable for such

proper execution or results. Failure of the EPC Contractor to do so shall constitute its acceptance of such other work as fit and proper for the reception of the Work.

**3.** In cases of disagreement or disputes between the EPC Contractor, the local utility company, and another contractor or Subcontractor which could delay or interfere with the Work due to the failure to collaborate and cooperate or which cannot be resolved between the EPC Contractor and the others involved, the Company shall be given prompt written notice thereof by the EPC Contractor specifying in detail the disagreement or dispute. In such cases, the Company shall have the right to determine the proper method of coordinating the Work, and the Company's decisions in this regard shall be final, binding, and conclusive.

**4.** The EPC Contractor shall designate an on-Site representative duly authorized to act for, and on behalf of, the EPC Contractor and to commit to decisions that shall be binding on the EPC Contractor. If requested by Company, said representative shall attend meetings which may be called by the Company. Notwithstanding the existence of a dispute or disagreement between the Company and the EPC Contractor, the EPC Contractor shall diligently and without interruption proceed with the Work to ensure full and timely completion of the Work in accordance with this EPC Contract.

**5.** The EPC Contractor shall coordinate with the Host to ensure the safety of Host's personnel, employees, and invitees. As between Company and EPC Contractor, the EPC Contractor shall be solely responsible for the safety of such persons.

## **ARTICLE 29. LABOR**

**1.** The EPC Contractor shall enforce discipline and good order on all persons on the Site. The EPC Contractor shall remove from the Site any person: whose presence is detrimental to the performance of the Work; who is not qualified to perform the Work assigned; or if reasonably requested by the Company.

**2.** The EPC Contractor, its employees and all of its Subcontractors and their employees shall work in harmony with all trades, employees and the contractors engaged in any work on the Site.

**3.** The EPC Contractor agrees that all Work that falls within the jurisdiction of a recognized skilled trade or craft shall be performed by union craft labor at a rate at least equivalent to the prevailing wage for the county in which the work is to be performed using the appropriate job classification for that county that most closely aligns with the work that the individual is actually performing. EPC contractor further agrees that, in connection with said Work, it or its subcontractor currently is or will become signatory to a Construction Industry Association form of collective bargaining agreement with an IBEW "A" Local or the appropriate bargaining representative for represented workers in the construction industry trades and crafts applicable to the Work. If the Work qualifies as a "public work" under the New Jersey State Prevailing Wage Act, N.J.S.A. 34:11-56.25 et seq. (the "Act"), the EPC Contractor shall be required to adhere to and comply with all aspects of the Act applicable to the EPC Contractor as a result of this EPC Contract.

4. The EPC Contractor shall furnish qualified workers in sufficient number for the efficient performance and timely completion of the Work in accordance with the Project Schedule and no failure to obtain qualified or sufficient labor shall entitle EPC Contractor to a Change. EPC Contractor shall, at all times, employ a sufficient number of qualified persons so that the Work is completed in an efficient, economical, professional and timely manner. EPC Contractor shall use all means and avenues of recruitment to insure sufficient labor for proper and timely completion of the Work.

5. The EPC Contractor and its Subcontractors shall comply with the Company's rules, regulations, and policies regarding personnel practices in the workplace, use of drugs and alcohol, and fitness for duty requirements. Copies of the rules, regulations, policies, and practices are available upon request from the Company. The EPC Contractor shall insert the foregoing compliance obligation into all of its contracts and agreements with the Subcontractors.

6. Whenever threatened or actual picketing, slowdowns, work stoppages, or other labor dispute may delay or otherwise affect the Work, the EPC Contractor shall immediately notify the Company in writing. Such notice shall include all relevant information regarding the labor dispute, its background, and the steps the EPC Contractor proposes to take to resolve or prevent its occurrence.

7. In the event of a labor dispute involving the EPC Contractor, including any of the EPC Contractor's Subcontractor(s), the EPC Contractor shall promptly initiate proceedings in such administrative, judicial, or arbitral forum having jurisdiction to resolve, or minimize the impact of the labor dispute.

8. In the event of a labor dispute, the EPC Contractor shall be liable to Company for all loss or damage incurred by the Company. The EPC Contractor's obligations in the event of any labor dispute shall include taking all reasonable legal steps necessary to have pickets removed.

9. In the event of a labor dispute, the Company shall not be liable for any payment, reimbursement, or other compensation, and any increase in pay, benefits, or other terms and conditions of employment shall not be charged to Company.

10. In the event the EPC Contractor is a subscriber to a multi-employer bargaining association or group, the EPC Contractor shall, if the Company so directs, participate to the fullest extent in the collective bargaining of that group with any of those labor organizations claiming jurisdiction of any portion of the Work under this EPC Contract.

#### **ARTICLE 30. COMPANY DIRECTED CHANGES**

1. The Company shall have the right, as described below, to change the scope of the Work and to make alterations, additions, deletions, modifications, changes, or departures in the scope, schedule, sequence, method, or performance of the Work or make changes in any specifications, plans, or drawings, that it may desire (each, a "Company Directed Change"), without invalidating this EPC Contract, and the EPC Contractor agrees to effect all such changes. Any such changes the Company elects to make shall be by written Change Order issued by the Company only and need not be executed by the EPC Contractor to be binding.

2. The Company may, at any time, by written notice to the EPC Contractor, propose a Company Directed Change. The EPC Contractor shall, at its own expense, within ten (10) Days thereafter, submit to Company a lump sum proposal, including a detailed description of changes in the Work that would be necessitated by the proposed Company Directed Change and any resulting changes that would be required herein as a result thereof.

3. In the event that a Company Directed Change decreases the cost or time of performing the Work, the Company shall be entitled to a reduction in the Contract Price reflecting such decrease.

4. Following receipt of the EPC Contractor's proposal, the Parties shall, within ten (10) Days thereafter, attempt to agree upon the cost of Company's proposed changes and the necessary changes, if any, to this EPC Contract. If the Parties agree upon all of the foregoing, they shall execute a Change Order.

5. If the Parties do not reach an agreement on the proposed Company Directed Change within ten (10) Days, the Company may, in writing, direct the EPC Contractor to proceed with the proposed Company Directed Change by unilaterally executing a Change Order, in which event, notwithstanding any other provision of this EPC Contract, the EPC Contractor shall implement Company's directed change as set forth in such Change Order executed by the Company. The EPC Contractor shall be entitled to a Change for such Company Directed Change if it submits a Change Request therefore within five (5) Days of the Company's issuance of a Change Order.

#### **ARTICLE 31. CHANGES**

1. Under no circumstances other than a Change Trigger Event shall the EPC Contractor be entitled to a Time Change or a Price Change or any other relief under this EPC Contract or from the Company.

2. In order to be eligible for such a Change, the EPC Contractor must submit a Change Request in accordance with the procedures set forth herein. If it is determined that the EPC Contractor has demonstrated that it is entitled to a Price Change or a Time Change as a result of a Change Trigger Event, the Parties shall execute a Change Order.

3. In no event shall the EPC Contractor be entitled to any extension of time, or relief for, its performance hereunder on account of any act, delay, obstruction, neglect, or interference attributable to the Company or any Person or cause, unless such delay, obstruction or interference is expressly defined as a Change Trigger Event, in which case the EPC Contractor shall only be entitled to such relief as is specified herein and the EPC Contractor hereby expressly waives any and all rights, on its own behalf as well as on the behalf of all Subcontractors and the EPC Contractor's agents, servants and employees, to any claim against any Company Person for damages or additional compensation or extension of time or excuse for performance as a result thereof under any legal or equitable theory including without limitation common law principles.

4. If, pursuant to any provision in this EPC Contract, the EPC Contractor is expressly entitled to a Change because a Change Trigger Event has occurred, the EPC Contractor

must submit a Change Request in order to receive such Change and the Parties shall in good faith attempt to agree upon such Change following the procedures set forth herein.

**5.** No Change Request shall be allowed to be submitted for any reason on or after the Substantial Completion Date if the incident giving rise to such Change Request occurred prior to the Substantial Completion Date.

**6.** If the EPC Contractor intends to submit to the Company a Change Request, the EPC Contractor must do so within the time period specified therefore in the relevant provision of this EPC Contract. No Change shall be made if the EPC Contractor fails to provide the Company with all notices required by this EPC Contract in connection with the Change Trigger Event in question and submit such Change Request to the Company within the relevant period therefore specified in this EPC Contract. In the event EPC Contractor fails to submit requisite Change Request in the time periods specified in the EPC Contract, EPC Contractor shall be deemed to have waived the right to any Change or any other relief. All Change Requests shall contain at a minimum: (a) all modifications, if any, as may be required to this EPC Contract; and (b) such additional information or documentation as the Company shall deem to be necessary or helpful in considering such Change Request.

**7.** Any Change Request submitted by the EPC Contractor for a Price Change shall be accompanied by appropriate supporting documentation containing an itemized breakdown of all elements constituting the basis for such Change Request and shall be determined based on the labor rates and unit pricing set forth on Exhibit H.

**8.** Any Change Request submitted by the EPC Contractor for a Time Change shall be accompanied by supporting documentation and a detailed narrative explaining why the Guaranteed Substantial Completion Date should be extended, and for how long, in accordance with critical path logic. The supporting documentation shall include updated critical path schedules and demonstrate, by comparison of unaffected and affected schedule versions, the relationship between the initiating event and both the existence and extent of the EPC Contractor's entitlement to additional time.

**9.** The Parties shall attempt to agree upon a Change within thirty (30) Days of the EPC Contractor's submission of a properly and fully documented Change Request to Company, provided always that while any Change Request is pending, the EPC Contractor shall continue to perform the Work in strict adherence to the Project Schedule and otherwise in accordance with the provisions of this Contract. The EPC Contractor shall not perform any extra or out of scope Work unless expressly authorized, in writing, by the Company.

**10.** When a Change has been determined and agreed upon pursuant to this Article, the Parties shall execute a Change Order reflecting such Change. The EPC Contractor may not vary or alter any part of the Work, except in accordance with a Change Order executed by the Parties or as directed by Company pursuant to a Company Directed Change. Once the parties execute a Change Order with respect to any matter, the EPC Contractor shall not be entitled to any Change or any claim for a Change, schedule extension or variation or modification of any other item that was included in such Change Order, nor will any subsequent Change Order (except as expressly set forth therein) be construed to alter a prior Change Order.

Changes in this Contract shall be made only to the extent expressly set forth in a Change Order executed by the Parties.

**11.** Change Trigger Events which reduce the quantity of Work to be provided shall not constitute a claim for damages or for anticipated or lost profits on the Work involved in such reductions, and the Company shall be entitled to a credit against the EPC Contract Price for the value of the omitted Work, but subject to an allowance to the EPC Contractor for any actual loss incurred by it in connection with expenses theretofore incurred in connection with the purchase, rental, delivery, and subsequent disposal of Materials related which are no longer useful or salvageable.

**12.** Notwithstanding anything to the contrary, the Company shall have the right to request that the EPC Contractor perform any Change on a lump sum fixed price basis. If the Parties agree that the EPC Contractor will perform out of scope work on a lump sum basis in lieu of a Price Change, the markup for overhead and profit included therein for such work shall not exceed 10%.

#### **ARTICLE 32. COMPANY'S RIGHT TO DO WORK**

**1.** If the EPC Contractor fails to furnish sufficient qualified workers or Materials of the required quality or quantity necessary to perform the Work in accordance with the requirements hereof or the Project Schedule for any period of three (3) or more Days after written notice specifying such failure, the Company shall have the option to supply workers, Materials, or both, and perform the Work. The Company shall deduct expenses incurred in engaging other Contractors, and supplying workers and Material from payments due or which may become due to the EPC Contractor or Retainage (including, without limitation, drawing under the Retainage LC and/or Performance LC). If expenses exceed the balance due or which becomes due to the EPC Contractor, the EPC Contractor shall pay the excess to the Company immediately upon written demand therefore.

**2.** Company shall have the right to perform work with its own employees or by other contractors and to permit other entities to do work during the progress and within the limits of, or adjacent to, the Site, and the EPC Contractor shall conduct its Work and cooperate with all others so as to mitigate any possible interference. The EPC Contractor shall allow other contractors or entities access to their work within the Site. The EPC Contractor shall make no claims against the Company for additional payment due to delays or other conditions created by the operations of such other parties.

#### **ARTICLE 33. CHARGES TO THE EPC CONTRACTOR FOR WORK PROVIDED BY COMPANY**

**1.** Any Work provided by the Company or its designee due to the EPC Contractor's failure to perform shall be charged to the EPC Contractor at the Company's cost, plus a fee of fifteen (15%) percent to cover overhead and burdens.

**ARTICLE 34. PROJECT SCHEDULE**

1. The EPC Contractor shall be responsible to ensure that all Work, including that of its Subcontractors, as well as work performed by others which may affect the EPC Contractor's Work, is included on the Project Schedule. The EPC Contractor's failure to include all such work, in whole or in part, shall not excuse the EPC Contractor from completing all Work within required dates.

2. The Company's review or acceptance of the Project Schedule or any Current Project Schedule shall not impose upon the Company any responsibility for the progress or scheduling of the Work, and the EPC Contractor shall be fully responsible to provide proper progress of the Work to completion, within the time set for completion in the approved Project Schedule.

3. Time of performance is of the essence. If the Work is behind schedule, the EPC Contractor shall increase its forces, work overtime, add shifts, or otherwise take all necessary steps to get the Work back on schedule at no additional cost to the Company.

**ARTICLE 35. FINANCING**

1. Upon request, the EPC Contractor shall assist the Company in obtaining project financing on a non-recourse basis. The EPC Contractor acknowledges that the Financing Parties will review this EPC Contract and may require changes hereto as a condition of providing financing, and the EPC Contractor agrees, in good faith, to consider amending this Contract to incorporate any such requirements and otherwise to cooperate with the Financing Parties. The EPC Contractor, at its expense, shall provide such documents and other technical assistance as Company may request in connection with obtaining financing for the Project including executing any consent to assignment requested by Financing Parties and a legal opinion acceptable to the Financing Parties from a reputable law firm licensed to practice in New Jersey.

**ARTICLE 36. INSPECTION, TESTS, AND REVIEWS**

1. Company shall have the option, without extra charge therefore, to inspect all Work under this EPC Contract at any time including at the place of manufacture.

2. No extra charge shall be made for standard factory tests usually made of Materials, nor for special tests made by the EPC Contractor on its own behalf. The Company shall be notified of any such tests and be permitted to observe them. The EPC Contractor shall give Company every reasonable opportunity to determine that all Materials meet the requirements of the EPC Contract.

3. The EPC Contractor shall furnish the Company with all test reports of the Work in electronic format if available and the Company shall have the option to review such test report prior to performance of the Work or shipment of any Materials.

**ARTICLE 37. SETOFF**

1. All claims for money due or which becomes due from the Company shall be subject to deduction or set-off by the Company by reason of any claim arising out of the EPC Contract or any other transaction with the EPC Contractor.

**ARTICLE 38. DISPUTES**

1. Notwithstanding the existence of a dispute between the Company and the EPC Contractor, the EPC Contractor shall diligently and without interruption proceed with the Work so as to ensure full completion of the Work on time and in accordance with the EPC Contract.

2. The EPC Contractor agrees to cooperate with and assist the Company in any dispute resolution, or other proceeding, involving the Project and related work whether or not the EPC Contractor is involved therein.

3. Where any dispute or difference relates to the nature of the Parties' obligations under the EPC Contract, Company shall give the EPC Contractor any instructions as may be necessary for proper performance of the Work and to prevent any delay of the Work pending resolution of the dispute or difference. The EPC Contractor shall comply immediately and fully with any such instructions.

4. If a dispute arises in connection with the EPC Contract, the Parties shall refer the dispute to senior officers of each with settlement authority. For a period of 15 Days thereafter, such officers shall attempt in good faith to resolve the dispute. If the dispute cannot be settled within such period, the Parties may proceed in accordance with Article 53.

**ARTICLE 39. ADEQUATE ASSURANCE OF FUTURE PERFORMANCE**

1. Within three (3) Days of a written request by the Company, the EPC Contractor shall provide the Company in writing adequate assurances that the EPC Contractor will perform its obligations in a timely fashion in accordance with this EPC Contract. The EPC Contractor's failure to provide such adequate assurance, or a statement by the EPC Contractor that the EPC Contractor cannot or will not perform in a timely fashion in accordance with the EPC Contract, or any act or omission of the EPC Contractor which makes it, in the Company's judgment, improbable at the time that the EPC Contractor will perform in accordance with the EPC Contract, shall permit the Company to terminate this EPC Contract for cause.

**ARTICLE 40. SUSPENSION OF WORK**

1. The Company shall at all times have the right, without prejudice to any other of its rights or remedies, to suspend temporarily the performance of the Work, in whole or in part, for its convenience by giving written notice to the EPC Contractor. The written notice shall state the extent, effective date, and expected duration of the suspension. Upon receipt of said notice, the EPC Contractor shall: (a) stop the Work in question on the date and to the extent specified and place no further orders or subcontracts except as may be: (i) required to complete portions of the Work not suspended, or (ii) directed by the Company; (b) promptly suspend, on

terms satisfactory to the Company, all orders or subcontracts related to the suspended Work; (c) take such action as may be necessary, or as the Company may direct, to protect the Work in which the Company has, or may acquire, an interest; (d) promptly comply with the Company's instructions and continue to perform and fully complete all Work that has not been suspended; (e) keep the Company fully informed about all actions taken or intended to be taken as a result of the suspension and within ten (10) Days of the written notice, submit an itemized list of all actions taken or intended to be taken, said list to be updated by the EPC Contractor as requested; (f) promptly resume and fully complete the Work if so notified by the Company; and (g) make every effort to reduce or otherwise mitigate any damage to the Company. The EPC Contractor shall not remove any Work from the Site unless the Company consents in writing.

2. After completing the actions described above, the EPC Contractor may submit a Change Request. The EPC Contractor shall furnish all information and documentation requested by the Company to substantiate the Change Request to the Company's full satisfaction. The EPC Contractor's Change Request must be submitted promptly, but not later than ninety (90) Days from the date of suspension.

3. As full compensation for such suspension, the EPC Contractor shall be reimbursed its actual, necessary, reasonable, and verifiable expenses incurred as a direct result of such slowdown or suspension. In no event shall the Company be liable for unabsorbed overhead, loss of anticipated profit or revenue, or other consequential economic loss due to the slowdown or suspension.

4. No Change Request shall be filed unless the EPC Contractor has incurred expenses as a direct result of such suspension. In the event of such suspension, the EPC Contractor shall be allowed one Day of additional time to achieve the Guaranteed Substantial Completion Date for each Day of such suspension. No compensation or extension of time shall be granted for suspension or slowdown if the Company exercises its right to suspend the Work due to the EPC Contractor's failure to provide Work, including Materials, in accordance with the requirements of this EPC Contract.

5. The EPC Contractor's full compliance with the requirements of this Article shall be a condition of receiving any Change, and the EPC Contractor's failure to comply with these requirements shall constitute a waiver of any claim for any Change or other relief.

#### **ARTICLE 41. TERMINATION FOR CONVENIENCE**

1. The Company shall at all times have the right, without prejudice to any other right or remedy, to terminate this EPC Contract, in whole or in part, for its convenience by giving written notice to the EPC Contractor. The written notice shall state the extent and effective date of the termination. On the effective date of termination, the EPC Contractor shall:

- a. stop the terminated Work on such date and to the extent specified and place no further orders or Subcontracts except as may be: (a) required to complete portions of the Work not terminated, or (b) directed by the Company;

- b.** promptly terminate, on terms satisfactory to the Company, all orders and agreements with Subcontractors related to the terminated Work, or, at the Company's option, assign those agreements to the Company or its designee, or take such other steps as the Company may direct;
- c.** take such action as may be necessary, or as the Company may direct, to protect the Work in which the Company has, or may acquire, an interest;
- d.** perform, at rates or on terms not to exceed those in the EPC Contract, any incidental or "close-out" work necessary, as directed by the Company, to ensure that the Company receives the full use and benefit of any Work provided prior to termination, including the provision of any and all information or documentation;
- e.** transfer to the Company title and possession of all terminated Work either partially or completely performed and complete all Work, if any, which was not terminated, provided, however, that such transfer shall not constitute acceptance of non-conforming Work.
- f.** execute and deliver all such papers and take all such steps, including the legal assignment of the EPC Contractor's contractual rights, as the Company may request for the purpose of fully vesting in it the rights and benefits of the EPC Contractor under such obligations or commitments;
- g.** promptly comply with the Company's instructions and continue to perform and fully complete all Work that has not been terminated; and
- h.** keep the Company fully informed about all actions taken or intended to be taken as a result of the termination and within ten (10) Days of the written notice, submit an itemized list of all actions taken or intended to be taken, said list to be updated by the EPC Contractor as requested.

**2.** After completing the actions described above, the EPC Contractor may submit a Change Request for a Price Change only. The EPC Contractor shall furnish all information and documentation requested by the Company to substantiate such Change Request to the Company's full satisfaction. The EPC Contractor's Change Request must be submitted promptly, but not later than ninety (90) Days from the date of termination.

**3.** If the EPC Contract is terminated prior to the EPC Contractor having performed any Work or placed any orders or entered into any agreements with Subcontractors, no payment shall be made to the EPC Contractor. If the EPC Contract is terminated after the EPC Contractor has commenced Work or placed orders or entered into any agreements with Subcontractors, the EPC Contractor shall be reimbursed its actual, necessary, reasonable, and verifiable expenses which may be incurred as a direct result of such termination by means of a Price Change. In no event shall the Company be liable for unabsorbed overhead, loss of anticipated profit or revenue, or other consequential economic loss due to the termination.

4. If the Company elects, at its option, to accept any Work or portion thereof, that is defective, incomplete or otherwise fails to conform to this EPC Contract, the Company shall be entitled to take a credit against the Contract Price. Termination shall not affect the EPC Contractor's warranty obligations for any Work provided under the Contract. The EPC Contractor shall not remove any Work from the Site unless the Company so directs in writing.

5. In the event of termination, the EPC Contractor shall make every effort to reduce or otherwise mitigate any expense or damage to the Company. The Company shall be entitled to a credit for any amounts owed to the EPC Contractor for the scrap, salvage, or resale value for Materials affected by the termination which Company elects not to keep. Any Materials affected by the termination which the Company elects to keep shall be provided at cost without payment of profit or sales commission.

6. The payment, if any, provided under this Article shall be the EPC Contractor's total and exclusive compensation which shall not exceed the EPC Contract Price. The EPC Contractor's full compliance with the requirements of this Article shall be a condition of receiving any payment hereunder, and the EPC Contractor's failure to comply with these requirements shall constitute a waiver of any claim for termination payments or a Price Change.

**ARTICLE 42. EVENTS OF DEFAULT AND TERMINATION FOR CAUSE**

1. The Company shall at all times have the right, at its option, to terminate this EPC Contract for cause, in whole or in part, by written notice to the EPC Contractor if (each of the following, an "EPC Contractor Event of Default"):

- a. the EPC Contractor becomes insolvent, makes a general assignment for the benefit of creditors; files or has filed against it a petition in bankruptcy or fails to pay any of its debts as they become due; is adjudged bankrupt or if its affairs are placed in the hands of a receiver, trustee, or assignee for the benefit of creditors;
- b. the EPC Contractor refuses or repeatedly fails to perform the Work or provide the Materials in a timely manner;
- c. the EPC Contractor refuses or repeatedly fails to provide enough properly skilled workers, supervisory personnel or proper Materials;
- d. the EPC Contractor neglects or abandons the Work;
- e. the EPC Contractor fails to make prompt payment to any of its Subcontractors;
- f. the EPC Contractor fails to comply with applicable Law;
- g. the EPC Contractor is unable to perform the Work, fails to provide adequate assurance of future performance, or fails to adhere to the Project Schedule;

- h.** the EPC Contractor becomes involved in litigation or labor problems which, in the Company's opinion, will delay or adversely affect the Work;
- i.** the EPC Contractor commits a material breach of any provision of this EPC Contract;
- j.** the EPC Contractor fails to achieve Substantial Completion within sixty (60) Days after the Guaranteed Substantial Completion Date;
- k.** the issuer of the Performance LC, Workmanship LC and/or the Retainage LC, as the case may be, fails or ceases to be an Eligible Bank, and within five (5) Days of such event a replacement Workmanship LC, Retainage LC and/or the Performance LC meeting the requirements of this EPC Contract is not issued by an Eligible Bank;
- l.** the EPC Contractor fails within thirty (30) Days after receipt of written request by Company to correct or submit a written plan acceptable to Company for the prompt correction of any defective or deficient Work or a plan to recover the Project Schedule;
- m.** any representation or warranty made by the EPC Contractor or in any certificate or financial statement furnished to the Company by the EPC Contractor shall prove to be false or misleading in any material respect as of the time made, confirmed or furnished; or
- n.** the EPC Contractor fails, after being notified thereof by the Company, to comply with any provision of this EPC Contract.

**2.** The termination notice shall state the extent and effective date of the termination for cause. On the effective date of such termination, the EPC Contractor shall promptly perform all the steps set forth in Section 41.1(a)-(h) inclusive.

**3.** In the event of termination for cause or an EPC Contractor Event of Default, the Company shall have the right to take possession of and use the Site and all Work or Materials, including tools, appliances, machinery, and equipment thereon, which shall be provided at cost without payment of any profit or sales commission, notwithstanding that such may belong to or be rented or leased by the EPC Contractor, and finish the Work by whatever method it may deem expedient. In such case, the EPC Contractor shall not be entitled to receive payment for said use and/or possession. The EPC Contractor shall not remove any Work from the Site unless the Company so directs in writing.

**4.** The Company shall have the right to take possession of and keep and take title to any Materials located off Site under the EPC Contractor's possession or control that are unique, specially-designed or manufactured for use or incorporation in the Work or which are not readily available on the general market without delay.

**5.** The Company shall have the right to use any Subcontractor with or without assuming its agreements with the EPC Contractor, and paying it in accordance with the

terms of its agreements with the EPC Contractor, or in accordance with such other terms as the Company and Subcontractor may agree to, and to credit such payments against the EPC Contract Price or charge the EPC Contractor therefor upon written demand.

**6.** In no event shall the Company be liable for unabsorbed overhead or loss of anticipated profit or revenue, or other consequential economic loss due to the termination. If the Company's damages due to the termination hereunder, including the Company's expense of finishing the Work, exceeds the unpaid balance of the EPC Contract Price, the EPC Contractor shall pay the difference to the Company no later than ten (10) Days following written demand.

**7.** If the Company elects, at its option, to accept any Work or portion thereof, that is defective, incomplete or otherwise fails to conform to this EPC Contract, the Company shall be entitled to a credit against the EPC Contract Price as well as draw the Performance LC and apply any Retainage (including drawing the Retainage LC if one has been posted). Termination shall not affect the EPC Contractor's warranty obligations for any Work provided under this EPC Contract.

**8.** In the event of termination, the EPC Contractor shall make every effort to reduce or otherwise mitigate any expense or damage to the Company. The Company shall be entitled to a credit for any amounts owed to the EPC Contractor for the scrap, salvage, or resale value for Materials affected by the termination which the Company elects not to keep. Any Materials affected by the termination which the Company elects to keep shall be provided at cost without payment of profit or sales commission.

**9.** If, after termination for cause, it is subsequently determined for any reason that the termination was not for cause, such termination shall be deemed to be a termination for convenience and the rights and obligations of the Parties shall be as set forth in Article 41 "Termination For Convenience".

**10.** The payment, if any, provided under this Article shall be the EPC Contractor's total and exclusive compensation which shall not exceed the EPC Contract Price. No such payment shall be made by the Company until the Company has completed, or elects not to complete the Work terminated for cause. The EPC Contractor's full compliance with the requirements of this Article shall be a condition of receiving any payment hereunder, and the EPC Contractor's failure to comply with these requirements shall constitute a waiver of any claim for termination.

#### **ARTICLE 43. REPRESENTATIONS**

The EPC Contractor hereby represents and warrants as of the date hereof that:

**1.** EPC Contractor has thoroughly examined and reviewed with legal counsel this EPC Contract and all applicable Law, which has been considered in the calculation of the EPC Contract Price and is reflected in the design of the Project and the Work;

**2.** EPC Contractor has full experience and proper qualifications to perform the Work and to construct the Project in accordance with the EPC Contract;

3. EPC Contractor has ascertained and is satisfied with: (i) the nature and location of the Work; (ii) the character and accessibility of the Site and its surrounding areas; (iii) the availability of lay down areas for equipment and tools; (iv) the existence of obstacles to construction (including underground utilities); (v) the availability of facilities and utilities; (vi) the location and character of homes, businesses, existing or adjacent work or structures (including without limitation railroad lines, roadways, utility lines and poles); (vii) other public and private rights of way; (viii) the condition of roads, waterways and bridges in the vicinity of the Site, including the conditions affecting shipping and transportation (such as the limitations of bridges and tunnels); (ix) access; (x) disposal, handling and storage of materials; (xi) the conditions, including general, local conditions, labor, safety, weather, water supply, water quality, (xii) the structural integrity and sufficiency of the Site; and (xiii) all other matters that might affect its performance of the Work or its costs or the construction of the Project;

4. all services provided and procedures followed by the EPC Contractor hereunder to engineer, design, procure, construct, and test the Project shall be done in a workmanlike manner and in accordance with prudent practices, all applicable Law, and all requirements of this EPC Contract;

5. EPC Contractor is familiar with all necessary facilities for delivering, handling and storing all Equipment and other parts of the Work;

6. EPC Contractor is familiar with all labor conditions and agreements relating to the performance of the Work;

7. EPC Contractor will design the Project so that its useful life may reasonably be expected to exceed twenty five (25) years; and

8. EPC Contractor is satisfied as to the means of communication with, and access to and through, the Site and any accommodations (including lay down areas) the EPC Contractor may require.

#### **ARTICLE 44. NATURE OF THE COMPANY'S RIGHTS**

1. The rights and remedies of the Company in the EPC Contract are cumulative and in addition to any other rights or remedies to which the Company may be entitled under law or in equity, and the exercise of any such rights or remedies shall not exclude the exercise of any other rights or remedies to which Company may be entitled. Neither the exercise of the Company's rights or remedies, nor the failure to exercise such rights or remedies, shall, in any manner, create any obligation to any third person or entity.

#### **ARTICLE 45. EQUAL EMPLOYMENT OPPORTUNITY/AFFIRMATIVE ACTION**

1. The EPC Contractor shall not discriminate against its employees or applicants for employment and shall comply with all of employment laws including Executive Orders 11141, 11246, 11375, 11458, 11625, 11701, and 11758. The EPC Contractor certifies that the EPC Contractor's facilities are not segregated and that the EPC Contractor complies with the Equal Opportunity Clause (41CFR60-1.4), the Affirmative Action Clause for Handicapped

Workers (41CFR60-741.4), and the Affirmative Action Clause for Disabled Veterans and Veterans of the Vietnam Era (41CFR60-250.4).

**2. EPC Contractor is in compliance with all of the laws and Executive Orders prohibiting discrimination, including, but not limited to, Title VII of the Civil Rights Act of 1964 as amended, the Age Discrimination in Employment Act, the Americans With Disabilities Act, and their state law counterparts. The EPC Contractor and its Subcontractors shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a) (for construction contractors, 41 CFR §60-4.3(a)). Contractor does not discriminate against qualified individuals based on their status as protected veterans or individuals with disabilities, and does not discriminate against individuals based on their race, color, religion, sex, sexual orientation, gender identity or national origin. Moreover, EPC contractor and its Subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, protected veteran status or disability. Contractor also agrees to comply with the provisions of 29 C.F.R. Part 471, Appendix A to Subpart A, as applicable.**

**3. Company is committed to increasing the amount of business placed with minority and women-owned firms. The EPC Contractors are encouraged to utilize qualified minority and women Subcontractors wherever possible. When a minority and women-owned firms is utilized, the EPC Contractor shall identify the Subcontractor along with the estimated dollar value of the subcontract.**

#### **ARTICLE 46. EMPLOYEE PROTECTION**

**1. The EPC Contractor shall be familiar with Section 210, “Employee Protection,” of the Energy Reorganization Act of 1974, 42 USC 5851, as amended; Title 10 of the CFR Section 50.7, “Protection of Employees Who Provide Information”; and 29 CFR Part 24, hereinafter “Whistleblower Provisions.” The EPC Contractor shall implement a program and develop procedures to advise all employees that they are entitled and encouraged to raise safety concerns to the EPC Contractor’s management, to the Company, without fear of discharge or other discrimination. In the event any allegation is made to the EPC Contractor by an employee of discriminatory acts prohibited by the Whistleblower Provisions or any indication that an employee intends to seek or has sought a remedy under the Whistleblower Provisions before the Department of Labor, the EPC Contractor shall notify the Company both verbally and by written notice within two (2) Days thereof.**

#### **ARTICLE 47. COMPLIANCE WITH WORK PERIODS IN LAND USE AGREEMENTS**

**1. The EPC Contractor shall comply with and perform all Work within the periods specified in the Land Use Agreements. The EPC Contractor shall indemnify and hold harmless the Company against any and all losses, damages, costs, expenses or claims arising out of, related to or in connection with the failure to comply with the foregoing.**

**ARTICLE 48. PROPRIETARY INFORMATION**

1. The Company shall have an irrevocable, nonexclusive, perpetual royalty-free license to use any technology, data, know-how, information, materials, inventions, improvements and discoveries, whether or not patentable or copyrightable, in any process, system, product, or method which is developed, conceived, made, or reduced to practice in the course of rendering Work and embedded in the Work.

**ARTICLE 49. ADVERTISING**

1. The EPC Contractor or its Subcontractor's, employees, or agents shall not use the Company's or Host's name, photographs, logo, trademark, or other identifying characteristics or that of any of the Company's subsidiaries or affiliates without Company's or Host's prior written approval. EPC Contractor shall not display, install, erect or maintain any advertising or other signage at the Site without the Company's or Host's prior written approval, except as may be required by Law. The EPC Contractor shall not cause to be published any advertisement nor issue any press release regarding the Project without coordinating with the Company at least fifteen (15) Days prior to such publication or release.

**ARTICLE 50. STANDARDS OF INTEGRITY**

1. The EPC Contractor, its employees and Subcontractors shall adhere at all times to the provisions contained in PSEG's Standards of Integrity, which can be found on its website, [www.pseg.com/integrity](http://www.pseg.com/integrity) or in booklet form upon request. In conjunction therewith, EPC Contractor, its employees and Subcontractors may be required to complete a certification of compliance if they are deemed to be involved in duties related to procurement activities, such as the selection and evaluation of bidders, Contract Administration activities, or, have access to what the Company regards as confidential information.

**ARTICLE 51. WAIVER**

1. The Company's failure to insist in any one or more instances upon strict performance of any provision of the EPC Contract, or failure or delay to take advantage of any of its rights or remedies hereunder, or failure to notify the EPC Contractor of any breach, violation, or default, shall not be construed as a waiver by the Company of any such performance, provision, right, breach, violation, or default, either then or for the future. Any waiver shall be effective only if in writing and signed by the Company's authorized representative, and only with respect to the particular case expressly covered therein.

2. In the event that the Company receives, accepts, or makes full or partial payment for any goods or services or Work that are defective, unsatisfactory, incomplete, delivered late, not performed on time, or which otherwise fail to conform to the provisions of this EPC Contract, the Company's receipt, acceptance, or payment shall be deemed to be under protest and without prejudice to any of the Company's rights or remedies.

**ARTICLE 52. HEADINGS**

The headings assigned to the Articles of this EPC Contract are for convenience only and shall not limit the scope and applicability of the Articles.

**ARTICLE 53. GOVERNING LAW, VENUE**

This EPC Contract shall be governed by, and construed in accordance with the laws of the State of New Jersey. Any legal claim, suit, proceeding, or action hereunder shall be brought in a court of competent jurisdiction located in Newark, New Jersey. The Parties agree not to submit any dispute or difference between them to arbitration. By execution and delivery of this EPC Contract, each of the Parties hereby accepts generally and unconditionally the jurisdiction of the aforesaid courts and appellate courts. Each of the Parties hereby irrevocably consents to the service of process of any of the aforementioned courts in any such action or proceeding by the mailing of copies thereof to it by registered or certified mail, postage prepaid, return receipt requested, to each of the Parties at its address set forth herein. Each of the Parties hereby irrevocably waives any objection which it may now or hereafter have to the laying of venue of any such action or proceeding in such respective jurisdictions. To the extent permitted by applicable Law, each of the Parties hereby irrevocably waives all right of trial by jury in any action, proceeding, or counterclaim arising out of or in connection with this EPC Contract or any matter arising hereunder.

**ARTICLE 54. SURVIVAL**

All provisions providing for limitation of or protection against loss or liability of the Company, including all licenses, warranties, protections, and indemnities, shall survive the termination, suspension, cancellation or expiration of the EPC Contract. If any of the terms, covenants or conditions hereof or the application of any such term, covenant or condition shall be held invalid or unenforceable as to either Party or as to any circumstance by any court having jurisdiction, the remainder of such terms, covenants or conditions shall not be affected thereby, shall remain in full force and effect and shall continue to be valid and enforceable in any other jurisdiction.

**ARTICLE 55. LIMITATION OF LIABILITY**

**1. THE EPC CONTRACTOR'S TOTAL LIABILITY TO THE COMPANY FOR ALL CLAIMS OR SUITS OF ANY KIND, WHETHER BASED UPON EPC CONTRACT, TORT (INCLUDING NEGLIGENCE), WARRANTY, STRICT LIABILITY, OR OTHERWISE, FOR ANY LOSSES, DAMAGES, COSTS OR EXPENSES OF ANY KIND WHATSOEVER ARISING OUT OF, RESULTING FROM, OR RELATED TO THE PERFORMANCE OR BREACH OF THIS EPC CONTRACT SHALL, UNDER NO CIRCUMSTANCES, EXCEED THE EPC CONTRACT PRICE, PROVIDED HOWEVER THAT THIS LIMITATION OF LIABILITY SHALL NOT APPLY (A) IN THE CASE OF THE GROSS NEGLIGENCE, FRAUD OR WILLFUL MISCONDUCT OF ANY EPC CONTRACTOR PERSON, (B) TO AN INDEMNIFICATION OBLIGATION ARISING WITH RESPECT TO A THIRD PARTY CLAIM, (C) TO THE VALUE OF ANY INSURANCE PROCEEDS ACTUALLY RECEIVED BY EPC CONTRACTOR AND (D) TO ANY FINES**

OR PENALTIES IMPOSED ON EPC CONTRACTOR IN CONNECTION WITH THE WORK.

2. IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER PARTY FOR INCIDENTAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES ARISING FROM OR RELATED TO THIS CONTRACT, WHETHER UNDER THEORY OF CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.

3. The indemnity provisions and insurance coverages to be provided herein shall in no way affect, nor are they intended as a limitation of the EPC Contractor's liability with respect to its performance of the Work. The issuance of a Certificate of Substantial Completion or Certificate of Final Acceptance shall not in any way modify or alter the EPC Contractor's obligations hereunder. No inspection, approval or payment by Company under this EPC Contract shall be construed to be an acceptance of defective material or workmanship, an admission that EPC Contractor performed the Work in accordance with the EPC Contract, or relieve the EPC Contractor of any of its obligations under this EPC Contract.

**ARTICLE 56. NOTICES**

1. All notices to be given herein shall be effective upon receipt and shall be in writing and delivered to the Parties by reputable overnight courier service at the following address (or such other address as may hereafter be designated in writing by a respective Party in accordance with this Article 62).

a. if to the Company:

80 Park Plaza  
Mailcode T-\_\_\_\_  
Newark, NJ 07102  
Telephone: [TBD]  
Attention: [TBD]

with a copy to:

80 Park Plaza  
Mailcode T-\_\_\_\_  
Newark, NJ 07102  
Telephone: [TBD]  
Attention: [TBD]

b. if to the EPC Contractor:

---

Telephone:  
Facsimile:  
Attention: The EPC Contractor's Project Manager

**ARTICLE 57. CONFIDENTIAL INFORMATION**

1. Any and all information or data, whether in oral, written, or physical form, (a) concerning the Company or (b) any product of the Company's expenditure of time, effort, money or creativity, which is (i) obtained from or provided by the Company to the EPC Contractor, (ii) developed, compiled or prepared by the EPC Contractor for the Company, or (iii) identified by the Company as confidential or proprietary shall be treated and maintained by the EPC Contractor as the Company's confidential and proprietary information and shall not in any manner be used or disclosed, in whole or in part without the Company's prior written permission.

2. The Company may disclose upon request any information related to this EPC Contract to the NJBPU or any other Governmental Authority having jurisdiction over the Company.

**ARTICLE 58. EPC CONTRACT PRICE**

1. As full consideration to the EPC Contractor for the full and complete performance of the Work and all costs incurred in connection therewith, Company shall pay, and the EPC Contractor accept [ ] dollars (\$ ) (the "EPC Contract Price") as such sum may be adjusted in accordance with this EPC Contract.

2. If the Company has issued a Change Order, the undisputed cost therefor shall be paid to the EPC Contractor on a percentage completion basis until any Price Change related thereto is resolved and the Company shall pay any such amounts due for such Change Order pursuant to invoices from the EPC Contractor which shall be rendered no more often than monthly. Disputed costs of any directed Change Order shall be retained by the Company pending resolution of any such dispute.

3. The EPC Contract Price shall not be subject to change for any reason except as expressly provided in this EPC Contract. Payment by the Company of the EPC Contract Price shall constitute full and complete compensation to the EPC Contractor for all of the Work to be performed hereunder.

4. The EPC Contractor shall not be entitled to any payment, reimbursement, or other compensation except as specified in this EPC Contract. The EPC Contractor's compensation shall not exceed the dollar amount of the EPC Contract Price plus any additional work authorized by written Change Order executed by the Company.

5. The EPC Contractor shall deliver a written list of the Materials and other components of the Work and the price for each for the Company's tax and accounting matters.

**ARTICLE 59. EPC CONTRACTOR TAXES**

1. The EPC Contract Price includes all the EPC Contractor Taxes and import or other duties. The EPC Contractor shall pay all payroll and other related employment and

compensation taxes for the EPC Contractor's employees and all federal, state and other taxes which may be assessed on the EPC Contractor's income from the Work, as well as any and all engineering and business license costs, excise, and other similar taxes which may be assessed on the Work or any equipment including import duty and excise taxes and any sales (including without limitation New Jersey sales taxes), works, use, or value added taxes which may be assessed on the Work (collectively, "EPC Contractor Taxes"). The firm fixed price set forth in this EPC Contract shall include all sales and use taxes, excises, customs and import duties, charges and levies, assessments or other charges of any kind levied by any Governmental Authority on or because of the Work, or on or because of EPC Contractor's income in the performance of this EPC Contract and EPC Contractor shall be responsible for all foreign, U.S. Federal, State, City and other local income, license, net-worth, privilege, personal, gross receipts or any other taxes arising out of or related to the EPC Contract or the performance of the Work.

#### **ARTICLE 60. PAYMENTS**

1. Not more than once per month during the performance of the Work, the EPC Contractor may submit to the Company a Payment Application for a Milestone Payment upon reaching all the milestones listed in the Milestone Payment Schedule with respect to such Milestone Payment, together with a duly executed Affidavit of Payment and Partial Release of Claims for Payment in the form of Exhibit I with respect to the previous payment made by Company and such documentation as the Company may require to substantiate the EPC Contractor's progress.

2. Within thirty (30) Days after the Company's receipt of a Payment Application, the Company shall determine (a) whether the Work has been done as described by the EPC Contractor; (b) whether the Work performed conforms with the requirements of this EPC Contract; (c) whether the Payment Application has been properly completed with a duly executed Affidavit of Payment and Partial Release of Claims for Payment in the form of Exhibit I with respect to the previous payment made by the Company; and (d) the amount due to the EPC Contractor therefor.

3. The Company shall pay the EPC Contractor within thirty (30) Days after the Company's receipt of a Payment Application the undisputed Payment Application amount *less* the sum of (a) the Retainage relating to such payment and (b) any amounts withheld under Article 63 of this Agreement.

#### **ARTICLE 61. RETAINAGE LC**

1. In lieu of cash Retainage, the EPC Contractor may deliver to the Company a Retainage LC issued by an Eligible Bank which is drawable by the Company in New York City and which shall expire no earlier than thirty (30) Days after the Final Acceptance Date. The face amount of the Retainage LC shall be ten (10%) of the EPC Contract Price. Upon receipt of the Retainage LC, the Company will not withhold (and/or return, as the case may be) Retainage in an amount equal to the available and undrawn amount of the Retainage LC. All costs related to the Retainage LC shall be borne by the EPC Contractor.

**ARTICLE 62. PAYMENT AND TITLE**

1. The EPC Contractor shall maintain complete, detailed, and accurate records of the Work provided under the EPC Contract, including the dates Work was provided, the dates materials and equipment were delivered to the site, and the dates the last Work, services, materials, or equipment were provided or delivered as applicable. Copies of said records shall be promptly provided to the Company by the EPC Contractor, at no cost or expense to the Company, upon the Company's request. Originals of such records shall be promptly provided for the Company's review, at no cost or expense to the Company, upon the Company's request.

2. Title to all Work and Materials shall pass to Company free and clear of any Lien upon the earlier of (i) delivery thereof to the Site or (ii) the time of payment therefor by Company under the applicable milestone payment, *provided, however*, that such passing of title (a) shall not be deemed to constitute the Company's acceptance of non-conforming Work, including Materials, and (b) shall not alter the risk of loss provisions hereof or the EPC Contractor's responsibility for and obligation to take proper steps and precautions to protect all Materials and other portions of the Work until the Substantial Completion Date.

3. The Company shall be entitled to rely upon the accuracy of any and all documents furnished by the EPC Contractor including: schedules of rates, daily time sheets, invoices, test reports, units of Work, or the like, and the Company's review thereof, if any, shall not operate as an acceptance or in any manner relieve the EPC Contractor from its responsibility for the performance of all the requirements of the EPC Contract. If at any time it shall be determined that the Company has been overcharged under the EPC Contract, the Company shall be entitled to a refund plus interest at the Delayed Payment Rate, setoff, or withholding.

4. The EPC Contractor shall promptly pay each Subcontractor the amount to which such Subcontractor is entitled. If the EPC Contractor fails to make prompt payment to any of its Subcontractors, the Company shall have the option to make future payments to the EPC Contractor in the form of joint checks naming the EPC Contractor and such Subcontractor(s) as joint payees. If the Company elects to use such joint check procedure, the Company may discontinue such practice at its sole discretion. Such joint check procedure shall not create any rights in favor of any person or entity beyond the right of the named payees to payment of the check. Endorsement of such joint check shall release the Company from any liability. At no time shall the Company be under any duty or obligation to issue joint checks. The EPC Contractor shall promptly notify Company of any dispute with, or claim by, any Subcontractor if such exceeds one hundred thousand dollars (\$100,000).

**ARTICLE 63. WITHHOLDING OF PAYMENTS**

1. The Company may withhold payments or deduct and offset from amounts allegedly due the EPC Contractor due to: (a) the EPC Contractor's failure to comply with any warranty or remedy defective Work, including, without limitation, incomplete Punch List items; (b) the EPC Contractor's failure to conform to or perform the EPC Contract; (c) levying of incorrect charges by the EPC Contractor; (d) the EPC Contractor's failure to pay any of its Subcontractors promptly; (e) the EPC Contractor's failure to carry out the Company's

instructions; (f) the EPC Contractor's failure to adhere to the Project Schedule or complete the Work within the time required thereby; (g) termination of the EPC Contractor for cause or damage to the Company or its property arising out of the Work; (h) claims or reasonably anticipated claims against the Company or its property or affiliates arising out of the Work; (i) Claims or Liens against the Project, the Site or either Party caused by or arising out of the Work by any EPC Contractor Person; (j) damage to Company or any Subcontractor that results from the EPC Contractor's failure to obtain or maintain insurance required to be maintained by it hereunder; (k) the EPC Contractor's failure to provide, on a timely basis, the documentation required under Part I; (l) the EPC Contractor's failure to pay when due any Liquidated Damages; (m) claims filed by any Subcontractor that have not been paid in accordance with its Subcontract; (n) the EPC Contractor's failure to make proper payment for any materials or labor or other obligations incurred as a result of activities carried out under this EPC Contract; or (o) reasonable evidence that any prior payment (together with the previously requested amounts) exceeds the amount payable with respect to Work actually performed.

2. In the event that any Lien is filed against the Company or the Host or their respective property by any Subcontractor, the Company shall have the right to withhold and pay the amount of the Lien directly to the Lien claimant and set-off and deduct such amount from the amount owed the EPC Contractor.

3. Company shall immediately notify the EPC Contractor of the reason Company is withholding any portion of a payment. Upon receipt of such notice, the EPC Contractor shall promptly take any and all steps available to remedy any condition identified by the Company as the basis for its withholding payment, including the bonding of Liens. The Company shall pay the disputed portion of the Payment Application within ten (10) Days following any agreed upon written resolution of the Company's claims.

#### **ARTICLE 64. PAYMENT OF THE RETAINAGE**

1. Company shall pay any Retainage not applied to liabilities of the EPC Contractor hereunder to the EPC Contractor within thirty (30) Days after the last to occur of: (a) the Final Acceptance Date; (b) the resolution of all claims hereunder; (c) and execution of the Affidavit of Payment and Final Release by the EPC Contractor and any other evidence the Company shall require that any Lien has been discharged of record.

#### **ARTICLE 65. PAYMENTS NOT APPROVAL OF WORK**

1. No payment made hereunder shall be considered an approval or acceptance of any Work or constitute a waiver of any claim or right that the Company may have at that time or thereafter, including claims and rights relating to warranty and indemnification obligations of the EPC Contractor.

#### **ARTICLE 66. FINAL PAYMENT**

1. The EPC Contractor's acceptance, by endorsement or otherwise, of final payment shall constitute a waiver of any and all claims, including any and all lien rights, claims, or notices of any kind against the Company or its property.

2. No payment or acceptance, final or otherwise, shall constitute acceptance by the Company of defective or otherwise non-conforming Work or in any way operate to release the EPC Contractor from any obligation under this EPC Contract.

#### **ARTICLE 67. SUSPENSION OF PAYMENTS**

1. Company shall not be obligated to make payments so long as an EPC Contractor Event of Default exists.

#### **ARTICLE 68. BACKGROUND CHECKS**

1. Prior to the start of any Work, EPC Contractor shall complete background checks and drug screenings required by Company as set forth in Exhibit \_\_ on any employee or agent of Contractor, or its Subcontractor(s) (“Contractor Representative”), who may have access without Company escort or uninterrupted oversight to Company’s or its customer’s: (a) property/facilities; (b) electronic systems or computer networks; (c) information resource; or (d) Confidential Information (“Unescorted Access”). Background checks will be deemed valid for seven (7) years.

2. EPC Contractor may utilize the services of a third party that Company has designated as its background check administrator (“Background Check Administrator”). Additional information may be obtained at the following link: <https://ca.fadv.com/CA/welcome.do?pseg>. EPC Contractor may also select its own third party to perform the applicable background checks if the third party (“Third Party Screener” or “TPS”) is: (a) in the business of conducting and verifying background investigation, (b) accredited by the National Association of Professional Background Screeners (“NAPBS”), and (c) approved by Company.

3. Once the background checks are performed by the TPS, EPC Contractor shall email the following information to the Company’s Business Assurance and Resilience Office (“BA&R”) at [BAandR@pseg.com](mailto:BAandR@pseg.com): (a) a statement certifying that the required screening was completed by the TPS, the date of completion, and that the screening did not reveal negative information (“Adverse Derogatory Information” or “ADI”) or that the ADI was mitigated to TPS and EPC Contractor satisfaction, and (b) a headshot photo of the Contractor Representative who was the subject of the screening.

4. EPC Contractor will then obtain a temporary (paper) Background Check Verification Card (“BCVC”) from the Background Check Administrator and shall provide it to the Contractor Representative to gain Unescorted Access for Work. The Background Check Administrator will subsequently issue a permanent (laminated) BCVC to Contractor to provide to the Contractor Representative. Contractor shall destroy the temporary BCVC at that time. The Contractor Representative must be in possession of the BCVC at all times while on Site or performing Work.

5. For as long as it has obligations to Company under this Contract, EPC Contractor shall immediately give written notice to BA&R at [BAandR@pseg.com](mailto:BAandR@pseg.com) if it becomes aware that a previously vetted and cleared Contractor Representative is involved in any situation that, if discovered during the background check, would have been considered ADI. Upon

discovery of ADI or removal of a Contractor Representative from having Unescorted Access for cause, EPC Contractor shall destroy all BCVCs from the Contractor Representative and notify BA&R at: [BAandR@pseg.com](mailto:BAandR@pseg.com) within twelve (12) hours.

**6. NERC/CIP Unescorted Access.** Where a Contractor Representative is deemed by Company to have Unescorted Access to Company's North American Electric Reliability Corporation ("NERC") Critical Infrastructure Protection ("CIP") facilities and EPC Contractor is not using Company's Background Check Administrator to conduct the applicable background checks, Contractor shall also be required to provide a letter certification to BA&R at [BAandR@pseg.com](mailto:BAandR@pseg.com) containing the following information: (a) the date the background check was performed for each Contractor Representative, and (b) written evidence of the completion of the background check in the form of a redacted background check or paid invoice from the Third Party Screener. If EPC Contractor determines that a Contractor Representative no longer requires access to Company's NERC CIP facilities, EPC Contractor shall provide Company with notice by email to [PSEG.contractor.termination.notice@pseg.com](mailto:PSEG.contractor.termination.notice@pseg.com) within twelve (12) hours of such determination.

## **ARTICLE 69. EXPORT CONTROL**

**1.** Each Party agrees to comply with and obtain required licenses and exemptions under the export controls Laws as applicable to such Party with regard to any export or re-export of controlled items as reasonably necessary in connection with this Contract. Neither EPC Contractor nor any of its subsidiaries, contractors, or Subcontractors shall export or re-export any technical data, process, product, or service, directly or indirectly (including the release of controlled technology to foreign nationals from controlled countries) to any country for which the United States government or any agency thereof requires an export license or other government approval without first obtaining such license or approval and providing Written Notice of same to Company.

**2.** EPC Contractor acknowledges that performance of this Contract is subject to compliance with applicable United States laws, regulations, and/or orders, including, but not limited to, those that relate to the export of nuclear materials, equipment, software, and technology, such as the United States Department of Energy regulations found in 10 CFR Part 810, the United States Nuclear Regulatory Commission regulations in 10 CFR Part 110, and the United States Department of Commerce's Export Administration Regulations found in 15 CFR Part 730 et seq., as may be amended (collectively, "Export Control Laws"). EPC Contractor agrees to comply with all Export Control Laws. EPC Contractor shall not export, re-export, transfer or retransfer, directly or indirectly, any items, software, or technology controlled for export by the Export Control Laws, except as permitted by such Export Control Laws. This includes release of export-controlled items, software, or technology to Foreign Nationals (as defined below) wherever they may be located, including inside the United States ("Deemed Export"). Notwithstanding anything to the contrary in this Contract, and in order to ensure compliance with Export Control Laws, EPC Contractor shall not, absent prior written approval by Company: (i) disclose or furnish export-controlled items, software, or technology to any Foreign Nationals who are: (1) of a different nationality than EPC Contractor or (2) not employees of EPC Contractor (including agents and other representatives); or (ii) use, directly or indirectly, export-controlled items, software, or technology in any application involving a

military use, missile technology, nuclear proliferation/nuclear explosive device, chemical and biological weapons proliferation. For purposes of this Article, "Foreign National" means any person who is neither a United States citizen, nor a "Lawful Permanent Resident" (i.e., Green Card holder, (8 USC § 1101(a)(20))), nor other "Protected Individual" under the Immigration and Naturalization Act (8 USC §1324b(a)(3)) designated as an asylee, refugee, or a temporary resident under amnesty provisions. A Foreign National also means any foreign corporation, business association, partnership, or any other entity or group that is not incorporated to do business in the United States.

**3.** EPC Contractor will insert a similar export control provision, as included in this Article, in any agreement through which it intends to transfer to third parties any export-controlled items, software, or technology that EPC Contractor acquired from Company; provided, however, that EPC Contractor shall be solely responsible for its and such third parties' compliance with the Export Control Laws.

**4.** The obligations set forth in this Article shall survive the expiration or termination of this Contract and shall apply so long as the applicable Export Control Laws remain in effect.

**5.** In the event of any ambiguity or inconsistency between the export control provisions of this Article and any other Article of this Contract, this Article shall be controlling.

END OF ARTICLES

**Exhibit A**

**Change Request**

**Public Service Electric and Gas Company**

Change Order No.: \_\_\_\_\_

Change Order Date: \_\_\_\_\_

Reference is made to the Turnkey, Lump Sum, Engineering, Procurement and Construction Contract For a Solar Photovoltaic Project between \_\_\_\_\_ (the "EPC Contractor") and Public Service Electric and Gas Company ("PSE&G"), dated as of \_\_\_\_\_, 201\_\_ (the "Contract"). Capitalized terms not otherwise defined in this Change Order have the same meaning as specified in the Contract.

**Account Code:** \_\_\_\_\_

**Vendor/Contractor/Subcontractor:** \_\_\_\_\_

Items	Description	Costs
	Contract Price Increase:  Reference Documents:	

Original Contract Price: \_\_\_\_\_

Previously approved Price Change Orders: \_\_\_\_\_

Previous Contract Price: \_\_\_\_\_

Amount of this Change Order: \_\_\_\_\_

New Contract Price: \_\_\_\_\_

Original Guaranteed Substantial Completion Date: \_\_\_\_\_

Previously approved Time Change Orders: \_\_\_\_\_

Amount of this Time Change Order: \_\_\_\_\_

New Guaranteed Substantial Completion Date: \_\_\_\_\_

Accepted and agreed this \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_.

**EPC Contractor**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**Public Service Electric and Gas Company**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**Exhibit B****Milestone Payment Schedule**

<b>Milestone</b>	<b>Payment</b>
Conceptual Design	5.0%
Issued for Construction Package	15.0%
Permits to Construct are in hand	10.0%
Site Civil Work Completed	10.0%
100% of Racking Delivered	7.5%
100% of Modules Delivered	7.5%
Inverters Delivered	5.0%
1/3 of Modules Installed	5.0%
2/3 of Modules Installed	5.0%
All Modules Installed	5.0%
Solar Facility Interconnected	10.0%
Substantial Completion (including warranties & submittals)	5.0%
Final Acceptance	10.0%
	<hr/> <hr/> 100.0%

**Exhibit C****Payment Application**

Date: [\_\_\_\_], 201\_\_,

Public Service Electric and Gas Company  
80 Park Plaza, T-8  
Newark, NJ 07102

Gentlemen:

The undersigned submits this payment application pursuant to Article 60 of the Turnkey Engineering, Procurement and Construction contract between EPC Contractor and Public Service Electric and Gas Company ("PSE&G"), dated as of [\_\_\_\_\_] (the "Contract"). Unless otherwise defined herein, all capitalized terms used herein shall have the meanings assigned to such terms in the Contract. The undersigned states that as of the date hereof:

(a) The following is the current status of the Contract account:

Contract Price \$ \_\_\_\_\_

All Price Changes \$ \_\_\_\_\_

Total Milestone Payments made by Company \$ \_\_\_\_\_

(less Retainage and any other withheld amounts or adjustments) \$ \_\_\_\_\_

Approximate Unpaid Contract Price \$ \_\_\_\_\_

(b) the information in all documents and materials prepared or signed by the EPC Contractor or any of its officers, agents or employees and submitted to PSE&G in support hereof is, in all material respects, true, correct and complete;

(c) the portion of the Work, as more particularly set forth in an annex A hereto and corresponding to milestone number \_\_\_ in the Milestone Payment of \_\_\_% of the Contract Price minus the applicable Retainage in the amount of \$\_\_\_; and

(d) no materially adverse change in the financial condition of the Contractor has occurred since [insert date of last application for payment] except as has been disclosed in writing in an annex hereto.

IN WITNESS WHEREOF, the undersigned have executed this Certificate of the date first above written.

Contractor

---

Name:

Title:

**Exhibit D****Retainage LC****IRREVOCABLE, TRANSFERABLE, STANDBY LETTER OF CREDIT**

Date: \_\_\_\_\_ Amount: \$ \_\_\_\_\_

Letter of Credit No.

Beneficiary: [INSERT NAME AND ADDRESS OF BENEFICIARY]

Ladies and Gentlemen:

We (the "Issuer") hereby establish our irrevocable, transferable, standby Letter of Credit No. \_\_\_\_\_ in your favor and for the account and at the request of [NAME OF APPLICANT] (the "Applicant"), whereby we irrevocably authorize you to draw on us from time to time at sight prior to the expiration hereof, and in the manner provided herein, up to \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ USD). Multiple and partial drawings are permitted. Funds under this Letter of Credit will be available to you upon your presentation of a drawing certificate, executed by one of your duly authorized representatives, in the form of Attachment A, "Drawing Certificate".

Presentation may be made for payment (in immediately available funds by wire transfer to the account of the Beneficiary designated in the Drawing Certificate) at the office of Issuer located at [ADDRESS OF ISSUER] (the "Presentation Office") on any Business Day. A "Business Day" shall mean any day other than Saturday, Sunday or any day on which commercial banking institutions in [CITY IN WHICH PRESENTATION OFFICE IS LOCATED] are authorized or required by law to close.

If a Drawing Certificate is presented at the Presentation Office on or before [10:00 a.m.], \_\_\_\_\_ Time, on a Business Day, we will pay to the Beneficiary (as directed in the Drawing Certificate) the amount demanded therein in immediately available funds by wire transfer to the account of the Beneficiary designated in the Drawing Certificate, no later than [5:00 p.m.], \_\_\_\_\_ Time, on the same Business Day. If a Drawing Certificate is presented at the Presentation Office after [10:00 a.m.], \_\_\_\_\_ Time, on a Business Day, we will pay to the Beneficiary (as directed in the Drawing Certificate) the amount demanded therein in immediately available funds by wire transfer to the account of the Beneficiary designated in the Drawing Certificate, no later than [1:00 p.m.], \_\_\_\_\_ Time, on the next succeeding Business Day. Any payment made hereunder shall be made without setoff or counterclaim. The Issuer hereby waives any rights of subrogation that it may acquire at law or in equity as a result of making any payment hereunder.

Faxed document(s) are acceptable.

Except as hereafter provided, this Letter of Credit shall remain in full force and effect until the 5:00 p.m. \_\_\_\_\_ Time on \_\_\_\_\_, 20\_\_\_. This Letter of Credit shall be automatically renewed after \_\_\_\_\_, 20\_\_ for successive one (1) year periods unless we provide Beneficiary with not less than sixty (60) days prior written notice that we elect not to renew this Letter of Credit.

This Letter of Credit shall be freely transferable by the Beneficiary hereunder on one or more occasions in whole, but not in part, and any such transfer shall be effective upon written notice thereof to the Issuer.

The obligation of the Issuer to make payment under this Letter of Credit is independent of, and is not conditioned upon, the payment of any fee. All fees and other costs chargeable by the Issuer in connection with this Letter of Credit are for the account of the Applicant and shall not in any manner be a liability or responsibility of the Beneficiary.

This Letter of Credit (which includes the attached Form of Drawing Certificate) sets forth in full the terms of our undertaking and such undertaking shall not in any way be modified, amended or amplified by reference to any document or instrument referred to herein, or in which this Letter of Credit is referred to, or to which this Letter of Credit relates, and no such reference shall be deemed to incorporate herein by reference any document or instrument.

This Letter of Credit is issued subject to the International Standby Practices, I.C.C. Publication 590 ("ISP98"), except to the extent that the terms hereof are inconsistent with the provisions of ISP98, including but not limited to Rule 5.01ai of ISP98, in which case the terms of this Letter of Credit shall govern, and as to matter not addressed by the ISP98 shall be governed and construed in accordance with the laws of the State of New Jersey and applicable U.S. Federal law.

We hereby (A) irrevocably submit to the jurisdiction of the New Jersey state courts or Federal District Court in New Jersey for the purpose of any suit, action or other proceeding arising out of this Letter of Credit, and (B) to the extent permitted by law, hereby irrevocably waive, and agree not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding any claim that we are not subject to the jurisdiction of the above-named courts, that suit, action or proceeding is improper or that this Letter of Credit may not be enforced in or by such court.

By:

ATTACHMENT A

FORM OF DRAWING CERTIFICATE

(DATE)

[NAME AND ADDRESS  
OF ISSUER]

Attention:

Re: Irrevocable, Transferable, Standby Letter of Credit No. \_\_\_\_\_

Dated \_\_\_\_\_

Ladies and Gentlemen:

1. Any capitalized terms used and not otherwise defined herein shall have the meanings set forth in the above-referenced letter of credit (the "Letter of Credit").

2. The undersigned certifies that the undersigned is an authorized representative of [INSERT NAME OF BENEFICIARY], the beneficiary of the Letter of Credit, and hereby further certifies as follows:

(a) [INSERT NAME OF BENEFICIARY] is the beneficiary of the Letter of Credit (the "Beneficiary"), and hereby demands the payment of U.S. \$\_\_\_\_\_ to the following account: [Insert wire instructions (to include name and account number of the Beneficiary)]

(b) The amount demanded in this Drawing Certificate does not exceed the amount of the Letter of Credit on the date hereof.

(c) Pursuant to the terms and provisions of that certain [STATE AGREEMENT BETWEEN BENEFICIARY AND APPLICANT TO WHICH THIS LETTER OF CREDIT RELATES], Beneficiary is entitled to the draw of the funds requested under this Drawing Certificate.

IN WITNESS WHEREOF, the undersigned has executed this Drawing Certificate as of the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

[INSERT NAME OF BENEFICIARY]

By: \_\_\_\_\_  
Name:  
Title:



Signed and delivered this \_\_\_ day of \_\_\_\_\_, 201\_\_.

By: \_\_\_\_\_

Officer's Title: \_\_\_\_\_

For: \_\_\_\_\_

Subscribed and sworn before this  
\_\_\_ day of \_\_\_\_\_, 201\_\_.

\_\_\_\_\_

**Exhibit F**

**Site**

*[Include Street Address, Tax Lot and Block, or Metes and Bounds Description sufficient to accurately identify the location of the Project]*

**Exhibit G****Performance LC****IRREVOCABLE, TRANSFERABLE, STANDBY LETTER OF CREDIT**

Date: \_\_\_\_\_ Amount: \$ \_\_\_\_\_

Letter of Credit No.

Beneficiary: [INSERT NAME AND ADDRESS OF BENEFICIARY]

Ladies and Gentlemen:

We (the "Issuer") hereby establish our irrevocable, transferable, standby Letter of Credit No. \_\_\_\_\_ in your favor and for the account and at the request of [NAME OF APPLICANT] (the "Applicant"), whereby we irrevocably authorize you to draw on us from time to time at sight prior to the expiration hereof, and in the manner provided herein, up to \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ USD). Multiple and partial drawings are permitted. Funds under this Letter of Credit will be available to you upon your presentation of a drawing certificate, executed by one of your duly authorized representatives, in the form of Attachment A, "Drawing Certificate".

Presentation may be made for payment (in immediately available funds by wire transfer to the account of the Beneficiary designated in the Drawing Certificate) at the office of Issuer located at [ADDRESS OF ISSUER] (the "Presentation Office") on any Business Day. A "Business Day" shall mean any day other than Saturday, Sunday or any day on which commercial banking institutions in [CITY IN WHICH PRESENTATION OFFICE IS LOCATED] are authorized or required by law to close.

If a Drawing Certificate is presented at the Presentation Office on or before [10:00 a.m.], \_\_\_\_\_ Time, on a Business Day, we will pay to the Beneficiary (as directed in the Drawing Certificate) the amount demanded therein in immediately available funds by wire transfer to the account of the Beneficiary designated in the Drawing Certificate, no later than [5:00 p.m.], \_\_\_\_\_ Time, on the same Business Day. If a Drawing Certificate is presented at the Presentation Office after [10:00 a.m.], \_\_\_\_\_ Time, on a Business Day, we will pay to the Beneficiary (as directed in the Drawing Certificate) the amount demanded therein in immediately available funds by wire transfer to the account of the Beneficiary designated in the Drawing Certificate, no later than [1:00 p.m.], \_\_\_\_\_ Time, on the next succeeding Business Day. Any payment made hereunder shall be made without setoff or counterclaim. The Issuer hereby waives any rights of subrogation that it may acquire at law or in equity as a result of making any payment hereunder.

Faxed document(s) are acceptable.

Except as hereafter provided, this Letter of Credit shall remain in full force and effect until the 5:00 p.m. \_\_\_\_\_ Time on \_\_\_\_\_, 20\_\_\_. This Letter of Credit shall be automatically renewed after \_\_\_\_\_, 20\_\_ for successive one (1) year periods unless we provide Beneficiary with not less than sixty (60) days prior written notice that we elect not to renew this Letter of Credit.

This Letter of Credit shall be freely transferable by the Beneficiary hereunder on one or more occasions in whole, but not in part, and any such transfer shall be effective upon written notice thereof to the Issuer.

The obligation of the Issuer to make payment under this Letter of Credit is independent of, and is not conditioned upon, the payment of any fee. All fees and other costs chargeable by the Issuer in connection with this Letter of Credit are for the account of the Applicant and shall not in any manner be a liability or responsibility of the Beneficiary.

This Letter of Credit (which includes the attached Form of Drawing Certificate) sets forth in full the terms of our undertaking and such undertaking shall not in any way be modified, amended or amplified by reference to any document or instrument referred to herein, or in which this Letter of Credit is referred to, or to which this Letter of Credit relates, and no such reference shall be deemed to incorporate herein by reference any document or instrument.

This Letter of Credit is issued subject to the International Standby Practices, I.C.C. Publication 590 ("ISP98"), except to the extent that the terms hereof are inconsistent with the provisions of ISP98, including but not limited to Rule 5.01ai of ISP98, in which case the terms of this Letter of Credit shall govern, and as to matter not addressed by the ISP98 shall be governed and construed in accordance with the laws of the State of New Jersey and applicable U.S. Federal law.

We hereby (A) irrevocably submit to the jurisdiction of the New Jersey state courts or Federal District Court in New Jersey for the purpose of any suit, action or other proceeding arising out of this Letter of Credit, and (B) to the extent permitted by law, hereby irrevocably waive, and agree not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding any claim that we are not subject to the jurisdiction of the above-named courts, that suit, action or proceeding is improper or that this Letter of Credit may not be enforced in or by such court.

By:

ATTACHMENT A

FORM OF DRAWING CERTIFICATE

(DATE)

[NAME AND ADDRESS  
OF ISSUER]

Attention:

Re: Irrevocable, Transferable, Standby Letter of Credit No. \_\_\_\_\_

Dated \_\_\_\_\_

Ladies and Gentlemen:

1. Any capitalized terms used and not otherwise defined herein shall have the meanings set forth in the above-referenced letter of credit (the "Letter of Credit").

2. The undersigned certifies that the undersigned is an authorized representative of [INSERT NAME OF BENEFICIARY], the beneficiary of the Letter of Credit, and hereby further certifies as follows:

(a) [INSERT NAME OF BENEFICIARY] is the beneficiary of the Letter of Credit (the "Beneficiary"), and hereby demands the payment of U.S. \$ \_\_\_\_\_ to the following account:

[Insert wire instructions (to include name and account number of the Beneficiary)]

(b) The amount demanded in this Drawing Certificate does not exceed the amount of the Letter of Credit on the date hereof.

(c) Pursuant to the terms and provisions of that certain [STATE AGREEMENT BETWEEN BENEFICIARY AND APPLICANT TO WHICH THIS LETTER OF CREDIT RELATES], Beneficiary is entitled to the draw of the funds requested under this Drawing Certificate.

IN WITNESS WHEREOF, the undersigned has executed this Drawing Certificate as of the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

[INSERT NAME OF BENEFICIARY]

By: \_\_\_\_\_

Name:

Title:

**Exhibit H**

**Labor Rates and Unit Pricing**

[to be provided by EPC Contractor]

**Exhibit I**

**Affidavit of Payment and Partial Release of Claims**

IN CONSIDERATION of the payment of \$\_\_\_\_\_ received from Public Service Electric and Gas Company ("PSE&G"), the undersigned, \_\_\_\_\_, releases PSE&G from all claims, demands and rights of lien that he/it may have against \_\_\_\_\_ to the extent of the amount shown hereon and previously paid, for all work, labor, materials, machinery, plant or other goods, equipment or services done, performed or furnished as specified below and denoted as "Work Performed", in connection with the following contract:

Company: Public Service Electric and Gas Company  
Contractor: \_\_\_\_\_  
Address of Project: \_\_\_\_\_  
Work Performed: \_\_\_\_\_

The undersigned waives and releases any claim and right of lien which it may now or hereafter have in connection with said contract, and warrants and agrees that he/it has not and shall not assign any claims for payment or right to perfect a lien against said contract.

The undersigned agrees that all guarantees and warranties required under the terms of the said contract pertaining to the work, labor and materials furnished by the undersigned shall remain in full force and effect in accordance with their terms which shall not be extended nor enlarged hereby.

The undersigned represents that all amounts due from the undersigned and/or its subcontractors or material suppliers for labor, material, equipment employed in the performance of this contract have been fully paid with respect to the work referenced above to the date of this waiver, or will be paid from these funds; and, that there are no amounts for which the undersigned would be liable under said contract for the work referenced above; and, that all other terms of the relevant subcontract, relating to the work set forth above, have been fully complied with by the undersigned.

The undersigned warrants that it has not been delayed in the performance of its work to date and that it has incurred no extra costs in connection herewith. The undersigned specifically waives, relinquishes and releases any and all claims incurred or alleged in connection with its work to date except only those claims, if any, previously denominated as claims and submitted in writing to \_\_\_\_\_.

The undersigned agrees to indemnify, defend and hold harmless Public Service Electric and Gas Company from any and all losses, claims, damages, expenses, including attorneys' fees, arising directly or indirectly from (a) any failure of the undersigned to pay in full all sums due its

laborers, subcontractors, material men and suppliers on the project, (b) from any liens against the project or the project monies filed by such laborers, subcontractors, material men or suppliers or (c) from any misrepresentation contained herein.

Total Contract Price: \_\_\_\_\_

Balance Due on Total Contract after above payment: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
By: \_\_\_\_\_  
Title: \_\_\_\_\_

State of New Jersey            )  
  ) ss:  
County of \_\_\_\_\_            )

Subscribed and sworn before this \_\_\_ day of \_\_\_\_\_, 201\_\_.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

**Exhibit J****Certificate of Substantial Completion**

The undersigned, \_\_\_\_\_ (“EPC Contractor”), does hereby deliver this Certificate of Substantial Completion, complete except for countersignature, to Public Service Electric and Gas Company (“Company”). Terms used and not defined herein shall have the meanings set forth in that certain Turnkey Lump-Sum Engineering, Procurement and Construction Contract for a Solar Photovoltaic Project (“EPC Contract”), dated as of \_\_\_\_\_, 201\_\_, by and between Company and EPC Contractor.

EPC Contractor hereby certifies and represents that the following statements are true as of the date set forth below:

- a. all equipment has been installed in accordance with manufacturers’ requirements and the requirements of this EPC Contract and all applicable pass-through warranties, as identified on Exhibit L attached hereto, have been assigned to the Company;
- b. all Work has been completed to the extent necessary to permit safe and reliable generation and transmission of electrical power in accordance with the Scope of Work and design specifications;
- c. the Punch List has been agreed upon and accepted in writing by the Company;
- d. all Work has been completed in accordance with Law, Land Use Agreements, and all building, electrical and code inspections required by the local electric distribution company or Law have been successfully completed and applicable certifications have been obtained;
- e. all of the following documents to the extent necessary to verify the requirements of this EPC Contract have been transmitted to Company and compiled in a format consistent with this EPC Contract: (i) all vendors’ and other manufacturers’ instructions, tests and certified drawings relating to Materials; (ii) QA/QC, and other test and inspection certificates and reports applicable to the Work; (iii) Specifications and Drawings (current as of such time); (iv) construction turnover packages; and (v) Project operating procedures and manuals, including all applicable system operations and maintenance manuals;
- f. the EPC Contractor has replaced or refilled any consumables and spare parts consumed during commissioning and testing;
- g. all activities in the construction and testing phases, as more particularly described in this EPC Contract, have been successfully completed;

- h.** all Delay Liquidated Damages have been paid in full;
- i.** the Project has successfully passed the Performance Test;
- j.** the medium voltage infrastructure and the grid connection for the Project are mechanically, electrically and functionally complete; the Project is interconnected with the local electric distribution company and is producing electricity; and
- k.** the NJBPU or its designee has certified that the Project is qualified to generate SRECs based on the electrical output of the Project.

Executed this \_\_\_\_ day of \_\_\_\_\_, 201\_\_

**EPC CONTRACTOR**

**ACCEPTED BY COMPANY:**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

---

**Exhibit K****Certificate of Final Acceptance**

The undersigned, \_\_\_\_\_ (“EPC Contractor”), does hereby deliver this Certificate of Final Acceptance, complete except for countersignature, to Public Service Electric and Gas Company (“Company”). Terms used and not defined herein shall have the meanings set forth in that certain Turnkey Lump-Sum Engineering, Procurement and Construction Contract for a Solar Photovoltaic Project (“EPC Contract”), dated as of \_\_\_\_\_, 201\_\_, by and between Company and EPC Contractor.

EPC Contractor hereby certifies and represents that the following statements are true as of the date set forth below:

- a.** the Company has issued a Certificate of Substantial Completion;
- b.** the Site is free of construction debris;
- c.** all items on the Punch List have been completed;
- d.** no Change Requests are pending;
- e.** EPC Contractor has provided six (6) hard copy sets of the final Project as-built documentation including:
  - \*All as-built engineering drawings and specifications
  - \*Vendor Drawings and Data
  - \*Instruction Manuals
  - \*Installation, Operation and Maintenance Manuals
  - \*All Permits with copies of close-out records as required
  - \*Control system software.
  - \*Spare Parts Lists
- f.** EPC Contractor has provided one (1) CD of the electronic as-built documentation, including executable CADD files and “.pdf” versions of all design drawings;
- g.** EPC Contractor has provided six (6) copies of an as-built site survey documenting the Solar Project as-built conditions in relation to the Site, easement areas and right of way areas;

- h.** all Liquidated Damages have been paid in full;
- i.** the Company has received an Affidavit of Payment and Final Release, in the form set forth in Exhibit E from the EPC Contractor;
- j.** the Company has received releases and waivers of all Liens against the Project, the Site, Company and its property from each Subcontractor who performed Work at the Site and such other documentation as Company may reasonably request to establish proof thereof;
- k.** EPC Contractor has completed all Work;
- l.** EPC Contractor has removed all of its construction equipment, material and support personnel from the Site; and
- m.** EPC Contractor has delivered to the Company an irrevocable standby letter of credit or has escrowed funds in accordance with the requirements of Article 20.2.

Executed this \_\_\_\_ day of \_\_\_\_\_, 201\_\_.

**EPC CONTRACTOR**

**ACCEPTED BY COMPANY:**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**Exhibit L****Pass-Through Warranties**

[EPC Contractor to deliver pass-thru warranties from the Major Equipment Vendors at Substantial Completion]

List/Identify Major Equipment Vendors

1. Solar module
2. Solar module warranty insurance – EPC Contractor must select a solar module supplier that can provide module warranty insurance. The warranty insurer must meet the following requirements:
  - Provide immediate coverage (no waiting period)
  - Insurance against product defects and performance output failures
  - 25 year non-cancellable term (even if the module manufacturer becomes insolvent or bankrupt)
  - AM Best rated “A” VIII or better
  - PSE&G must have the right to make a claim under the insurance
3. Inverter
4. Racking system
5. Transformer
6. Switchgear
7. Monitoring equipment

**Exhibit M**

**System Performance Test Procedures**

EPC Contractor shall provide the following Performance Guarantees:

System Output:

The output of the entire Project shall be \_\_\_ MW AC, which means (a) the sum of the nameplate AC capacities of the inverters shall be no less than \_\_\_ MW, and (b) the DC portion of the Project, which is defined as the sum of the nameplate capacities of the solar modules under Standard Test Conditions, shall not be less than \_\_\_ MW (DC.)

Guaranteed Acceptance Test Performance Ratio (Guaranteed ATPR):

The Guaranteed ATPR shall be 85% and is defined as follows:

$PR =$	$E_{AC}$
	$\eta_{Plant} * I_{POA} * A_{array}$

Where:

$E_{AC}$  = total AC power produced at the point of the delivery (revenue meter)

$\eta_{Plant}$  = plant module efficiency at Standard Test Conditions

$I_{POA}$  = plane of array irradiance measurement

$A_{array}$  = module total array area

The Guaranteed ATPR shall include all losses including those associated with irradiation, PV modules, module degradation, array mismatches, inverters, inverter power point tracking, wiring, transformers, shading, soiling, degradation prior to Acceptance Test and the like. The only allowable adjustments shall be correction of module performance from actual ambient conditions at the time of the test to Standard Test Conditions.

The System Performance Testing Protocol shall be as follows:

**Purpose:**

This a spot test according to the test protocol is intended to serve as a detailed technical guide to the application of the provisions of the testing pursuant to this Exhibit M.

**Measuring equipment:**

Pyranometers:

(2) Kipp & Zonen CMP22 WMO Secondary Standard pyranometers (2% expected accuracy)

Calibrated yearly provided by NREL if possible, or by the manufacturer, EPC Contractor and approved by Company. EPC Contractor shall provide test protocol for Company’s review and approval no later than 90 days prior to the planned Acceptance Test.

Datalogger:

Campbell Scientific

CR1000 datalogger

PS100 Battery & power supply

PC400 software

Shortcut software

Laptop computer

USB to 9-pin serial RS 232 cable (Campbell Scientific P/N 17394)

Carrying Case

Back-of-module temperature sensor:

(3) 110PV-L Type E thermocouples

or

SI-111 Infrared radiometer (P/N 19119)

CM230 adjustable (P/N 17908)

Temperature sensor for pyranometer temperature correction:

Campbell Scientific 107-L thermistor sensor or as recommended by pyranometer manufacturer (with CMP22 this is an integral feature of the pyranometer).

Power meter:

ANSI C12.20 Class .2

Pulse output if possible for communication with CR1000 datalogger

**Exhibit N**  
**Permit Responsibility Matrix**

**[Sample only. Final Matrix to be Determined  
for each Project Site]**

	<b>PSE&amp;G</b>	<b>EPC Contractor</b>
Local Zoning Board or Planning Board Approval		
Soil Conservation District Certification		
County Planning Board Approval (waiver)		
DRBC - (if required)		
DEP Wetlands Letter of Interpretation		
BPU Subsection T approval		
DEP Closed Landfill Cap Mod		
DEP Minor Landfill disruption (if required)		
PJM Interconnection	X	Note 1
Building permits including trailer permits		
Road Opening/Access Permits (if required)		
Registration and certification of the Project with NJ Office of Clean Energy for SRECs		

The EPC Contractor will supply the Company with all required Licensing and Permitting Packages where and when necessary, which shall include all technical data inclusive of drawings, calculations, studies, and specifications, to support Project permitting efforts in accordance with current Federal, State, Regional, County and Municipal regulations, as applicable. All drawings, calculations, studies, and specifications shall be signed and sealed by a professional engineer licensed in the State of New Jersey. The Company will maintain applicant signature and submittal authority in obtaining all necessary permits as per the matrix above.

Note 1 – If the EPC Contractor or the Host has already initiated the PJM interconnection process at the time of the execution of the EPC Contract, EPC Contractor and PSE&G shall thereafter coordinate all communications and submittals to PJM, with PSE&G having primary responsibility for obtaining the final interconnection approval. All interconnection rights and queue positions associated with the Project shall be assigned to PSE&G.

Note 2 – The EPC Contractor shall advise PSE&G if there are Permits not specifically identified on this “Sample” Exhibit N that must be obtained in connection with the construction of the Project. EPC Contractor and PSE&G shall allocate responsibility for obtaining any such Permits.

**Exhibit O**

**Land Use Agreements**

**Exhibit P****Workmanship LC****IRREVOCABLE, TRANSFERABLE, STANDBY LETTER OF CREDIT**

Date: \_\_\_\_\_ Amount: \$ \_\_\_\_\_

Letter of Credit No.

Beneficiary: [INSERT NAME AND ADDRESS OF BENEFICIARY]

Ladies and Gentlemen:

We (the "Issuer") hereby establish our irrevocable, transferable, standby Letter of Credit No. \_\_\_\_\_ in your favor and for the account and at the request of [NAME OF APPLICANT] (the "Applicant"), whereby we irrevocably authorize you to draw on us from time to time at sight prior to the expiration hereof, and in the manner provided herein, up to \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ USD). Multiple and partial drawings are permitted. Funds under this Letter of Credit will be available to you upon your presentation of a drawing certificate, executed by one of your duly authorized representatives, in the form of Attachment A, "Drawing Certificate".

Presentation may be made for payment (in immediately available funds by wire transfer to the account of the Beneficiary designated in the Drawing Certificate) at the office of Issuer located at [ADDRESS OF ISSUER] (the "Presentation Office") on any Business Day. A "Business Day" shall mean any day other than Saturday, Sunday or any day on which commercial banking institutions in [CITY IN WHICH PRESENTATION OFFICE IS LOCATED] are authorized or required by law to close.

If a Drawing Certificate is presented at the Presentation Office on or before [10:00 a.m.], \_\_\_\_\_ Time, on a Business Day, we will pay to the Beneficiary (as directed in the Drawing Certificate) the amount demanded therein in immediately available funds by wire transfer to the account of the Beneficiary designated in the Drawing Certificate, no later than [5:00 p.m.], \_\_\_\_\_ Time, on the same Business Day. If a Drawing Certificate is presented at the Presentation Office after [10:00 a.m.], \_\_\_\_\_ Time, on a Business Day, we will pay to the Beneficiary (as directed in the Drawing Certificate) the amount demanded therein in immediately available funds by wire transfer to the account of the Beneficiary designated in the Drawing Certificate, no later than [1:00 p.m.], \_\_\_\_\_ Time, on the next succeeding Business Day. Any payment made hereunder shall be made without setoff or counterclaim. The Issuer hereby waives any rights of subrogation that it may acquire at law or in equity as a result of making any payment hereunder.

Faxed document(s) are acceptable.

Except as hereafter provided, this Letter of Credit shall remain in full force and effect until the 5:00 p.m. \_\_\_\_\_ Time on \_\_\_\_\_, 20\_\_\_. This Letter of Credit shall be automatically renewed after \_\_\_\_\_, 20\_\_ for successive one (1) year periods unless we provide Beneficiary with not less than sixty (60) days prior written notice that we elect not to renew this Letter of Credit.

This Letter of Credit shall be freely transferable by the Beneficiary hereunder on one or more occasions in whole, but not in part, and any such transfer shall be effective upon written notice thereof to the Issuer.

The obligation of the Issuer to make payment under this Letter of Credit is independent of, and is not conditioned upon, the payment of any fee. All fees and other costs chargeable by the Issuer in connection with this Letter of Credit are for the account of the Applicant and shall not in any manner be a liability or responsibility of the Beneficiary.

This Letter of Credit (which includes the attached Form of Drawing Certificate) sets forth in full the terms of our undertaking and such undertaking shall not in any way be modified, amended or amplified by reference to any document or instrument referred to herein, or in which this Letter of Credit is referred to, or to which this Letter of Credit relates, and no such reference shall be deemed to incorporate herein by reference any document or instrument.

This Letter of Credit is issued subject to the International Standby Practices, I.C.C. Publication 590 ("ISP98"), except to the extent that the terms hereof are inconsistent with the provisions of ISP98, including but not limited to Rule 5.01ai of ISP98, in which case the terms of this Letter of Credit shall govern, and as to matter not addressed by the ISP98 shall be governed and construed in accordance with the laws of the State of New Jersey and applicable U.S. Federal law.

We hereby (A) irrevocably submit to the jurisdiction of the New Jersey state courts or Federal District Court in New Jersey for the purpose of any suit, action or other proceeding arising out of this Letter of Credit, and (B) to the extent permitted by law, hereby irrevocably waive, and agree not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding any claim that we are not subject to the jurisdiction of the above-named courts, that suit, action or proceeding is improper or that this Letter of Credit may not be enforced in or by such court.

By:

ATTACHMENT A

FORM OF DRAWING CERTIFICATE

(DATE)

[NAME AND ADDRESS  
OF ISSUER]

Attention:

Re: Irrevocable, Transferable, Standby Letter of Credit No. \_\_\_\_\_

Dated \_\_\_\_\_

Ladies and Gentlemen:

1. Any capitalized terms used and not otherwise defined herein shall have the meanings set forth in the above-referenced letter of credit (the "Letter of Credit").

2. The undersigned certifies that the undersigned is an authorized representative of [INSERT NAME OF BENEFICIARY], the beneficiary of the Letter of Credit, and hereby further certifies as follows:

(a) [INSERT NAME OF BENEFICIARY] is the beneficiary of the Letter of Credit (the "Beneficiary"), and hereby demands the payment of U.S. \$\_\_\_\_\_ to the following account: [Insert wire instructions (to include name and account number of the Beneficiary)]

(b) The amount demanded in this Drawing Certificate does not exceed the amount of the Letter of Credit on the date hereof.

(c) Pursuant to the terms and provisions of that certain [STATE AGREEMENT BETWEEN BENEFICIARY AND APPLICANT TO WHICH THIS LETTER OF CREDIT RELATES], Beneficiary is entitled to the draw of the funds requested under this Drawing Certificate.

IN WITNESS WHEREOF, the undersigned has executed this Drawing Certificate as of the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

[INSERT NAME OF BENEFICIARY]

By: \_\_\_\_\_

Name:

Title:

**Exhibit Q****EPC Contractor Insurance**

Prior to the start of Work, Contractor shall at its own expense, procure and maintain in effect during performance and until final completion and acceptance of any Work under the Contract the following minimum insurance coverages with carriers acceptable to Company including:

1. Workers' Compensation insurance in accordance with statutory limits, as required by the state in which the Work is to be performed, and Employer's Liability insurance with limits of not less than one million dollars (\$1,000,000) per occurrence.
2. Commercial General Liability insurance (occurrence form) providing coverage for premises, bodily injury, property damage, personal injury, advertising injury, if applicable, blanket contractual liability, covering Contractor's obligations under this Contract, products and completed operations for not less than three (3) years from the date the Company accepts the Work, coverage for independent contractors and broad form property damage coverage with limits of not less than one million dollars (\$1,000,000) for each occurrence with an annual aggregate of three million dollars (\$3,000,000) per project or per location where Work is performed.
3. Commercial Automobile Liability insurance providing coverage for all owned, non-owned, and hired automobiles used by the Contractor in the performance of the Work with a combined single limit of not less than one million dollars (\$1,000,000) for each occurrence of bodily injury and property damage.
4. Excess or Umbrella Liability insurance with a limit of not less than five million dollars (\$5,000,000) for each occurrence with an annual aggregate of five million dollars (\$5,000,000) per project or per location where the Work is performed. This limit applies in excess of each of the coverages set forth above in paragraphs 1 (Employer's Liability), 2 (Commercial General Liability insurance), and 3 (Commercial Automobile Liability insurance), which are scheduled as primary.
5. Pollution Legal Liability Insurance Policy ("PLL Policy") insuring EPC Contractor and Company against liabilities and obligations, including liabilities and obligations pursuant to this Agreement, resulting from or in connection with Environmental Conditions on, at, under or emanating from the Site, including, without limitation, all such conditions existing or occurring prior to the Final Acceptance Date, which PLL Policy shall have a policy term of not less than ten (10) years from the Final Acceptance Date, limits of coverage (per claim and aggregate) of not less than \$20 million and a self-insured retention (per claim) of not more than \$50,000. Company shall be named in such policy as an Additional Named Insured. EPC Contractor shall pay all costs necessary to obtain such policy, shall pay all premiums required by the same when due and shall satisfy all other terms and conditions of such policy imposed upon the Insured. In the event such PLL Policy is cancelled, terminated or coverage is denied by reason of any failure of EPC Contractor to comply with any

- terms and conditions of such policy, EPC Contractor shall be responsible at its sole cost and expense for all liabilities and obligations that would otherwise be satisfied or paid by such policy. The policy shall specifically provide for a waiver of subrogation against any named or additional insured.
6. Professional Liability insurance with a minimum limit of five million dollars (\$5,000,000) per claim where the Work involves or includes Contractor providing or performing design, engineering, consulting, or any professional services.
  7. Builder's Risk Insurance for the benefit of Company, Financing Parties (if any), EPC Contractor and all Subcontractors or suppliers performing work at the Site. Such coverage shall be in an amount equal to the full replacement value of the Project and be issued by underwriters reasonably acceptable to Company. The policy shall remain in full force and effect from mobilization to the Site until the Substantial Completion. Coverage shall include but not be limited to coverage against perils typically insured against for similar projects, including damage or loss caused by earth movement, flood, windstorm (each with sublimits as commercially available), functional and acceptance testing, fire and extended coverage and including mechanical breakdown and electrical malfunction, and resultant damage due to error in design, defect in materials or faulty workmanship. EPC Contractor shall obtain a waiver by the insurer of all subrogation rights against all insured parties. Policy Deductible amounts shall be based on a "per occurrence" basis not to exceed \$100,000 and shall be for the account of EPC Contractor.
  8. Transit Insurance covering any and all EPC Contractor provided Materials and equipment intended to form a part of the Project while they are in transit (including inland, ocean or air transit) from anywhere in the world, including intermediate storage. Coverage shall attach at the commencement of loading and continue until the completion of offloading at the Project Site and shall be written with a policy limit not less than the value of the largest single cargo shipment. Policy Deductible amounts shall be based on a "per occurrence" basis not to exceed \$50,000 and shall be for the account of EPC Contractor.

General Conditions applicable to insurance coverages.

A. Except for Professional Liability cover, the insurance coverages to be provided by Contractor under this Contract shall not include (i) any "claims made" insurance policies, (ii) any self-insured retention or deductible amount greater than two hundred fifty thousand dollars (\$250,000) unless approved in writing by Company, and (iii) any restrictions or limitations which are inconsistent with the Company's rights under the Contract.

B. All insurance policies shall provide the following: (i) be primary to any other insurance or self-insurance carried by the Company; (ii) contain standard cross-liability provisions; and (iii) provide for a waiver of all rights of subrogation against the Company by Contractor and its insurers.

C. Company reserves the right at any time, including after the Work has begun, to require Contractor to procure and maintain additional coverages or limits and Contractor shall furnish such additional insurance or limits. The Company shall reimburse the EPC Contractor for any increase in premium at cost without mark-up.

D. All liability insurance policies shall name the Company and its successors and assigns, as additional insureds and Contractor shall maintain the required coverages, naming the Company as an additional insured, for a period of not less than three (3) years from the date the Company accepts the Work.

E. Prior to the start of any Work, Contractor shall deliver to the Company evidence of the required insurance coverage in the form of Certificates of Insurance acceptable to Company. The Certificates of Insurance and the insurance policies shall provide that coverage afforded under the policies will not be canceled, allowed to expire or the limits in any manner reduced, until at least thirty (30) days prior written notice, ten (10) days written notice in the case of nonpayment of premium, has been given to Company. Company may inspect any or all policies of insurance at any time.

F. All insurance coverages required under the Contract shall be provided by insurance companies acceptable to Company and having ratings of A-/VII or better in the Best's Key Rating Insurance Guide (latest edition in effect at the latest date stated in the Certificates of Insurance referred to in paragraph 4 above (Evidence of Insurance)).

G. Failure to obtain and maintain the insurance required under the Contract shall constitute a material breach of the Contract and Contractor will be liable for any and all costs, liabilities, and damages, (including attorney's fees, court costs, and settlement expenses) resulting to Company from such breach. In the event Contractor fails to provide the required insurance, Company may at its option, procure said insurance at Contractor's expense.

H. The insurance requirements set forth above are to protect the Company from any and all claims by third parties, including employees of the Contractor, its agents, subcontractors and invitees. Said insurance, however, is in no manner to relieve or release Contractor, its agents, subcontractors and invitees from, or limit their liability as to, any and all obligations assumed under the Contract.

**Exhibit R****Availability Factor Test**

On the one year anniversary of the Substantial Completion Date, the EPC Contractor shall calculate the availability of the Project for the preceding year using the formula set forth below.

“Actual Available Hours” / “Total Daylight Hours”

“**Available**” means that an inverter is on line and performing.

“**Actual Available Hours**” means the total number of hours that each inverter is Available in the preceding year, as determined by the Project monitoring system.

“**Total Daylight Hours**” means the total number of daylight hours in a day (measured beginning one hour after sunrise and ending one hour prior to sunset) in the preceding year at the Site. Total Daylight Hours shall not include hours of unavailability caused by (a) Force Majeure Excused Events, (b) forced outages resulting from the interconnecting utility, or (c) damage caused by PSE&G or its contractors.

Each inverter at the Project shall be Available for 98% (or more) of the Total Daylight Hours. For every hour the Project is available below 98% of the Total Daylight Hours, the EPC Contractor shall pay liquidated damages in the amount of \$165.00 per such hour per MW-dc.

**Exhibit S**

**Key EPC Contractor Personnel**

**Exhibit T**

**Payment Bond – Performance Bond**

*[see following pages]*

**PERFORMANCE BOND**

**Public Service Electric and Gas Company** (the "Owner") and \_\_\_\_\_ (the "Contractor") have entered into a Contract (the "Contract") dated \_\_\_\_\_, 201\_\_, for \_\_\_\_\_ (the "Project"). The Contract is incorporated by reference into this Performance Bond (the "Bond").

The Contractor as Principal and \_\_\_\_\_ (the "Surety"), are bound to the Owner as Obligee in the maximum amount of \_\_\_\_\_ Dollars (\$\_\_\_) (the "Penal Sum"). The Contractor and Surety hereby bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as set forth below.

1. It is the condition of this Bond that if the Contractor performs its Contract obligations, including but not limited to its obligations regarding Contractor's Warranty and Correction of Work (the "Work"), the Surety's obligations under this Bond are null and void. Otherwise the Surety's obligations shall remain in full force and effect. The Surety waives notice of any alterations or extensions of time made by the Owner in the Contract. The Owner may not invoke the provisions of this Bond unless the Owner has performed its obligations pursuant to the Contract. Upon making demand on this Bond, the Owner shall make the "Contract Balance" (defined as the total amount payable by the Owner to the Contractor pursuant to the Contract *less* amounts properly paid by the Owner to the Contractor) available to the Surety for completion of the Work.

2. If the Contractor is in default pursuant to the Contract and the Owner has declared the Contractor in default, the Surety may promptly remedy the default or shall:

- a. Arrange for the Contractor to complete the Work, with the consent of the Owner, which consent may be withheld for any reason;
- b. Arrange for the completion of the Work by another contractor acceptable to the Owner and secured by performance and payment bonds acceptable to the Owner and issued by a qualified surety. The Surety shall make available sufficient funds to pay the cost of completion of the Work less the Contract Balance, up to the Penal Sum; or
- c. Waive its right to complete the Work, and reimburse the Owner the amount of its reasonable costs to complete the Work, less the Contract Balance, not to exceed the Penal Sum.

3. If the Surety elects to act under any portion of Section 2, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Contract. Subject to the commitment by the Owner to make the Contract Balance available to the Surety, the Surety is obligated, without duplication, for:

- a. the responsibilities of the Contractor for correction of defective work and completion of the Contract; and

- b. additional legal, design, professional and delay costs resulting from the Contractor's default, or resulting from the actions or failure to act of the Surety under Section 2, or both; and
- c. liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the Contractor; and
- d. reasonable costs and expenses (including attorney's fees) incurred by Owner to enforce its rights under this Bond.

4. Any proceedings under or pursuant to this Bond shall be instituted in any court of competent jurisdiction in the location in which the Project is located and shall be commenced within two years after (a) a declaration of Contractor default or (b) substantial completion of the Work, whichever occurs first. If this provision is prohibited by law, the minimum period of limitation available to sureties in the jurisdiction shall be applicable.

SIGNED AND SEALED THIS \_\_\_\_ DAY OF \_\_\_\_\_, 201\_\_.  
SURETY \_\_\_\_\_ (SEAL)  
BY: \_\_\_\_\_  
PRINT NAME: \_\_\_\_\_  
PRINT TITLE: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
(ATTACH POWER OF ATTORNEY)

CONTRACTOR \_\_\_\_\_ (SEAL)  
BY: \_\_\_\_\_  
PRINT NAME: \_\_\_\_\_  
PRINT TITLE: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_

**PAYMENT BOND**

**Public Service Electric and Gas Company** (the "Owner") and \_\_\_\_\_ (the "Contractor") have entered into a Contract (the "Contract") dated \_\_\_\_\_ for \_\_\_\_\_ (the Project"). The Contract is incorporated by reference into this Payment Bond (the "Bond").

The Contractor as Principal and \_\_\_\_\_ (the "Surety") are bound to the Owner as Obligee in the maximum amount of \_\_\_\_\_ Dollars (\$\_\_\_\_) (the "Penal Sum"). The Contractor and Surety hereby bind themselves, their heirs, executors, administrators, successor and assigns, jointly and severally, as set forth below.

1. It is the condition of this Bond that if the Contractor promptly makes payment of all sums for all labor, materials, and equipment furnished for use in the performance of the work required by the Contract, the Surety's obligations pursuant to this Bond are null and void. Otherwise the Surety's obligations shall remain in full force and effect. The Surety waives notice of any alterations or extensions of time made by the Owner in the Contract.

2. Every Claimant (as defined below) who has not been paid in full before the expiration of a period of ninety (90) days after such Claimant performed the last of the work or labor, or furnished the last of the materials for which said claim is made, may have a right of action on this Bond. The Surety's obligation to the Claimant(s) shall not exceed the Penal Sum.

3. No suit or action shall be commenced on this Bond by any Claimant:

a. Unless Claimant (other than one having a direct contract with the Contractor) shall have given written notice to the Contractor, the Owner and the Surety within ninety (90) Days after the Claimant provided or performed the last of the work or labor, or furnished the last of the materials for which the claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was performed. Such notice shall be served upon the Surety and the Contractor by certified mail or hand delivery to the addresses shown on the signature page of this document. Such notice shall be served upon the Owner by certified mail or hand delivery to 80 Park Plaza, *[insert mailcode of project manager]*, Newark, NJ 07012, Attn: *[Insert Name of Project Manager]*.

b. After the expiration of one (1) year from the date on which the Claimant last performed labor or furnished materials or equipment on the Project. If this provision is prohibited by law, the minimum period of limitation available to sureties in the jurisdiction shall be applicable.

c. Other than in any court of competent jurisdiction in the location in which the Project is located.

4. A Claimant is defined as an individual or entity having a direct contract with the Contractor or having a contract with a subcontractor having a direct contract with the Contractor to furnish labor, materials or equipment for use in the performance of the Contract.

5. The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have no obligation to make payments to or give notice on behalf of Claimants, or have any obligations to Claimants under this Bond. Surety shall promptly cause the dismissal or discharge of any lien claim or lien filed against Owner or its property by any Claimant and shall reimburse Owner for all reasonable costs and expenses (including attorney's fees) incurred by Owner to enforce its rights under this Bond.

SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 201\_\_.

SURETY \_\_\_\_\_ (SEAL)

BY: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

PRINT TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

(ATTACH POWER OF ATTORNEY)

CONTRACTOR \_\_\_\_\_ (SEAL)

BY: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

PRINT TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

**Exhibit U****Form of Guaranty**

GUARANTY (this “Guaranty”), dated as of \_\_\_\_\_, made by [*insert Parent Company name*] (the “Guarantor”), a corporation organized and existing under the laws of \_\_\_\_\_ in favor of Public Service Electric and Gas Company (the “Guaranteed Party”), a corporation organized and existing under the laws of the State of New Jersey. Guarantor enters into this Guaranty in consideration of, and as an inducement for Guaranteed Party having entered into the [*insert title of Contract*] (the “Agreement”) with [*insert Supplier/Contractor name*], a subsidiary, and/or affiliated company of Guarantor (the “Obligor”), to provide services and/or materials to Guaranteed Party. Guarantor will realize a present, direct, pecuniary benefit from the execution and consummation of the Agreement by the Guaranteed Party. The Guarantor hereby acknowledges receipt of the Agreement.

1. The Guarantor, as primary obligor and not merely as surety, hereby irrevocably and unconditionally guaranties the full and prompt payment when due (whether by acceleration or otherwise) of the principal of and interest on any sums due and payable by the Obligor under the Agreement and of all other obligations and liabilities (including, without limitation, indemnities, fees and interest thereon) of the Obligor out of or in connection with the Agreement and the due performance and compliance with the terms of the Agreement and any other documents, agreements, memoranda, contracts, or other writings executed in connection therewith by the Obligor (all such principal, interest, obligations and liabilities, collectively, the “Guaranteed Obligations”). All payments by the Guarantor under this Guaranty, to the extent owing to the Guaranteed Party, shall be made on the same basis as payments by the Obligor under the Agreement. This Guaranty is a guaranty of payment and not of collection. If at any time Obligor fails, neglects or refuses to timely or fully perform any of the Guaranteed Obligations as expressly provided in the terms and conditions of the Agreement, then upon receipt of written notice from Guaranteed Party specifying the failure, Guarantor shall pay all payment obligations under the Agreement or cause to be performed, any such non payment obligation, responsibility, or undertaking as required pursuant to the terms and conditions of the Agreement.

2. The Guarantor hereby waives notice of acceptance of this Guaranty and notice of any liability to which it may apply, and waives presentment and demand of payment, protest, notice of dishonor or nonpayment of any such liability, suit or taking of other action by any Guaranteed Party against, and any other notice to, any party liable thereon (including the Guarantor or any other guarantor).

3. The Guaranteed Party may, at any time and from time to time, without the consent of the Guarantor, without incurring responsibility to the Guarantor and without impairing or releasing the obligations of the Guarantor hereunder, upon or without any terms or conditions, take or refrain from taking any and all actions with respect to the Guaranteed Obligations or any person (including the Obligor) that the Guaranteed Party determines in its sole discretion to be necessary or appropriate.

4. The obligations of the Guarantor under this Guaranty are absolute and unconditional and, without limiting the generality of the foregoing, shall not be released, discharged or otherwise affected by: (i) any extension, renewal, settlement, compromise, waiver, discharge or release in respect of any Guaranteed Obligations of the Obligor; (ii) the existence, or extent of, any release, exchange, surrender, non-perfection or invalidity of any direct or indirect security for any of the Guaranteed Obligations; (iii) any modification, amendment, waiver, extension of or supplement to any of the Agreement(s) or the Guaranteed Obligations agreed to from time to time by the Obligor and the Guaranteed Party; (iv) any change in the corporate existence (including its constitution, laws, rules, regulations or powers), structure or ownership of the Obligor or the Guarantor, or any insolvency, bankruptcy, reorganization or other similar proceedings affecting the Obligor or its assets, the Guarantor or any other guarantor of any of the Guaranteed Obligations; (v) the existence of any claim, set-off or other rights which the Guarantor may have at any time against the Obligor, the Guaranteed Party or any other corporation or person, whether in connection herewith or in connection with any unrelated transaction; provided that nothing herein shall prevent the assertion of any such claim by separate suit or compulsory counterclaim; (vi) the invalidity or unenforceability in whole or in part of the Agreement(s) or any Guaranteed Obligations or any instrument evidencing any Guaranteed Obligations; and (vii) any other act or omission to act or delay of any kind of the Obligor, any other guarantor, the Guaranteed Party or any other corporation or person or any other event, occurrence or circumstance whatsoever which might, but for the provisions of this paragraph constitute a legal or equitable discharge of the Guarantor's obligations hereunder.

5. So long as any Guaranteed Obligations are outstanding and owed to Guaranteed Party, the Guarantor hereby irrevocably subordinates to the Guaranteed Party: (a) any right of reimbursement or contribution, (b) any right of salvage against the Obligor or any collateral security or guaranty or right of offset held by the Guaranteed Party therefor, and (c) any rights that it may acquire against Obligor by way of subrogation.

6. This Guaranty is a continuing one and all liabilities to which it applies or may apply under the terms hereof shall be conclusively presumed to have been created in reliance hereon. No failure or delay on the part of the Guaranteed Party in exercising any right, power or privilege hereunder, and no course of dealing between the Guarantor and the Guaranteed Party, shall operate as a waiver thereof; nor shall any single or partial exercise of any right, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The rights, powers and remedies herein expressly provided are cumulative and not exclusive of any rights, powers or remedies which the Guaranteed Party would otherwise have. No notice to or demand on the Guarantor in any case shall entitle the Guarantor to any other or further notice of demand in similar or other circumstances or constitute a waiver of the rights of the Guaranteed Party to any other or further action in any circumstances without notice or demand.

7. This Guaranty shall be binding upon the Guarantor and upon its legal representatives, its successors and assigns and shall inure to the benefit of the Guaranteed Party and its successors and assigns; provided, however, that neither the Guaranteed Party nor the Guarantor may assign or transfer any of its rights or obligations hereunder without the prior written consent of the other party, which consent shall not be unreasonably withheld or delayed.

8. Neither this Guaranty nor any provision hereof may be changed, waived, discharged or terminated except upon written agreement of the Guaranteed Party.

9. Guarantor agrees that its liability as guarantor shall continue and remain in full force and effect in the event that all or any part of any payment made hereunder or any obligation or liability guaranteed hereunder is recovered (as a fraudulent conveyance, preference or otherwise) rescinded or must otherwise be reinstated or returned due to bankruptcy or insolvency laws or otherwise.

10. All notices and other communications hereunder shall be made at the addresses by hand delivery (effective upon scheduled weekday delivery day) or reputable overnight courier service (effective as of the date of receipt):

If to the Guarantor:

With a copy to:

*[Insert Contact Information]*

Attn:

Attn:

If to the Guaranteed Party:

With a copy to:

Public Service Electric and Gas Company  
Attn: Corporate Secretary  
80 Park Plaza, T-4  
Newark, NJ 07102

PSEG Services Corporation  
Attn: Vice President, Commercial Law  
80 Park Plaza, T-5  
Newark, NJ 07102

11. This Guaranty shall terminate and be discharged on the date on which all of the Guaranteed Obligations have been paid, performed, discharged and observed. The Guarantor shall not have the right to terminate this Guaranty or to be released, relieved or discharged from its obligations hereunder, arising out of the performance or nonperformance of the Agreement by Guaranteed Party or Obligor.

12. Guarantor represents and warrants that: (i) it is duly organized and validly existing under the laws of the jurisdiction in which it was organized and has the power and authority to execute, deliver, and perform this Guaranty; (ii) no authorization, approval, consent or order of, or registration or filing with, any court or other governmental body having jurisdiction over Guarantor is required on the part of Guarantor for the execution, delivery and performance of this Guaranty; (iii) this Guaranty constitutes a valid and legally binding agreement of Guarantor, and is enforceable against Guarantor, except as the enforceability of this Guaranty may be limited by the effect of any applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditor's rights generally and by general principles of equity; and (iv) the execution, delivery and performance of this Guaranty by Guarantor have been and remain duly

authorized by all necessary corporate action and do not contravene any provision of its Articles of Incorporation or By-Laws or any law, regulation or contractual restriction binding on it or its assets.

**13. THIS GUARANTY SHALL BE GOVERNED, CONSTRUED AND ENFORCED ACCORDING TO THE INTERNAL LAW OF THE STATE OF NEW JERSEY, WITHOUT REFERENCE TO THE PRINCIPLES OF CONFLICT OF LAWS. ANY CLAIM UNDER OR DISPUTE ARISING OUT OF THIS GUARANTY SHALL BE SUBMITTED TO THE EXCLUSIVE JURISDICTION OF THE FEDERAL COURTS IN NEW JERSEY OR THE COURTS OF THE STATE OF NEW JERSEY, AND GUARANTOR HEREBY SUBMITS TO THE IN PERSONAM JURISDICTION OF SUCH COURTS. THE GUARANTOR IRREVOCABLY CONSENTS TO THE SERVICE OF PROCESS OF ANY OF THE AFOREMENTIONED COURTS IN ANY SUCH ACTION OR PROCEEDING BY REGISTERED OR CERTIFIED MAIL TO THE GUARANTOR. THE GUARANTOR HEREBY IRREVOCABLY WAIVES ANY RIGHT OF TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM ARISING OUT OF OR IN CONNECTION WITH THIS GUARANTY OR ANY MATTER ARISING HEREUNDER.**

14. This writing is the complete and exclusive statement of the terms of this Guaranty and supersedes all prior oral or written representations, understandings, and agreements between Guaranteed Party and Guarantor with respect to subject matter hereof. Guaranteed Party and Guarantor agree that there are no conditions to the full effectiveness of this Guaranty.

15. Every provision of this Guaranty is intended to be severable. If any term or provision hereof is declared to be illegal or invalid for any reason whatsoever by a court of competent jurisdiction, such illegality or invalidity shall not affect the balance of the terms and provisions hereof, which terms and provisions shall remain binding and enforceable. This Guaranty may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one instrument.

IN WITNESS WHEREOF, the Guarantor has caused this Guaranty to be executed and delivered as of the date first above written.

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
(Print)  
Title: \_\_\_\_\_

## SURFACE LEASE

This SURFACE LEASE (this “Lease”) is entered into as of \_\_\_\_\_, 201\_\_ (the “Effective Date”), by and between \_\_\_\_\_ a \_\_\_\_\_ (“Lessor”) and Public Service Electric and Gas Company, a New Jersey corporation (“PSE&G”). PSE&G and Lessor are also referred to herein individually as a “Party” and collectively as the “Parties.”

WHEREAS, by order dated \_\_\_\_\_, the New Jersey Board of Public Utilities (“NJBPU”), in Docket Number \_\_\_\_\_ (the “BPU Order”), authorized PSE&G to invest funds to construct, own and operate solar electric generating projects located on landfills and brownfields;

WHEREAS, PSE&G desires to lease real property to develop, construct, own and operate a Solar Facility (as defined below) on real property owned by Lessor located at \_\_\_\_\_; and

WHEREAS, Lessor has agreed to lease certain real property to PSE&G for the construction, operation and maintenance of the Solar Facility.

NOW, THEREFORE, in consideration of the premises, the covenants set forth herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound, the Parties agree as follows.

### **Article 1. DEFINITIONS**

1.1. **Definitions.** As used in this Lease, the following terms shall have the respective meanings set forth below.

“Affiliate” of a specified Person means any other Person that directly or indirectly, through one or more intermediaries, controls, is controlled by or is under common control with the specified Person. For the purposes of this definition, “control,” when used with respect to any specified Person, means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities, by contract, or otherwise, and the terms “controlling” and “controlled” have correlative meanings.

“Applicable Bankruptcy Law” has the meaning set forth in Section 14.1(d).

“Assignment” has the meaning set forth in Section 16.1.

“BPU Order Conditions Precedent” means that (i) the NJBPU shall have issued an Order or other written determination pursuant to N.J.S.A. 48:3-87(t) in form and content satisfactory to PSE&G in its sole discretion approving the landfill on the Leased Premises as a “properly closed sanitary landfill” as such phrase is defined and used in the foregoing provision and (ii) *[placeholder for NJBPU condition precedent (if any).]*

“Business Day” means a Day on which Federal Reserve member banks in New York City are open for business.

“Change in Law” means a change in applicable Law that either (a) renders the performance of this Lease illegal or unenforceable, or (b) modifies, eliminates, reduces, or abolishes tax incentives and credits available under the Code as of the Effective Date.

“Claims” means, with respect to any Indemnified Person, all claims or actions (including claims for Losses) asserted, threatened or filed against such Indemnified Person by any Third Party, regardless of whether groundless, false or fraudulent, that directly or indirectly relate to the subject matter of an Indemnity in favor of such Indemnified Person, whether such claims or actions are asserted, threatened or filed prior to or after the termination of this Lease, and, in the case of Indemnification arising under Article 13, shall include any such claims or actions asserted, threatened or filed by PSE&G or Lessor, as applicable.

“Closure and Post-Closure Plan” means a written plan approved by the NJDEP for the closure and post-closure care or maintenance of the landfill located on the Leased Premises, as the same may be amended from time to time, all in accordance with N.J.A.C. 26:2A-9 or other applicable law, including any amendment required in order to permit PSE&G to construct, install, operate, maintain, repair and replace the Solar Facility at the Leased Premises.

“Closure and Post-Closure Improvements” means all structures, improvements, engineering controls, and equipment, and all associated piping and other infrastructure, required to be installed or installed in connection with closure and post-closure care or monitoring, pursuant to Environmental Laws, of the landfill located at the Lessor Property including any cap, liner, cutoff wall, stormwater management system, gas collection system and leachate collection and/or groundwater monitoring or remediation system.

“COD” or “commercial operation date” means the date the Solar Facility is qualified to receive solar renewable energy certificates (“SRECs”).

“Code” means the Internal Revenue Code of 1986, as amended.

“Conditions Precedent” means that the Lease shall not be legally binding on PSE&G until the EPC Contract Condition Precedent and BPU Order Conditions Precedent have been satisfied and there has been no modification, elimination, reduction, or abolishment of tax incentives and credits available under the Code prior to the date upon which PSE&G commences the installation of the Solar Facility.

“Contamination” means the presence of or release of Hazardous Substances (as hereinafter defined) into any environmental media from, upon, within, below, into or on any portion of the Lessor Property so as to require investigation, abatement, encapsulation, cleanup, removal or remediation under any applicable Environmental Law (as hereinafter defined).

“Day” means a period of 24 consecutive hours, beginning at midnight ET on any calendar day.

“Deed Notice” shall have the meaning given to such term in N.J.A.C. 7:26C-1.3.

“Defaulting Party” has the meaning set forth in Section 14.1.

“Early Termination Date” has the meaning set forth in Section 14.2(a).

“Entity” means a corporation, limited liability company, partnership (including a general partnership, joint venture, limited partnership, limited liability partnership or partnership association), trust (including a business trust), estate, Governmental Entity or any other entity.

“Environment” means ambient air, surface water, groundwater, land surface and subsurface strata, and all natural resources therein or thereon.

“Environmental Laws” means all Laws in effect from time to time regulating Hazardous Materials; the protection of the Environment; pollution; contamination; or cleanup of Hazardous Materials, pollution or contamination; including all of the following federal Laws, and their implementing regulations, as well as any amendments to such Laws, and all state and local Laws that regulate the same subject matter: (a) the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. §9601 et seq.; (b) the Solid Waste Disposal Act, 42 U.S.C. §6901 et seq., including the Resource Conservation and Recovery Act (RCRA) and the Laws governing underground storage tanks; (c) the Toxic Substances Control Act (TSCA), 15 U.S.C. §2601 et seq., including those provisions governing use and disposal of Polychlorinated Biphenyls (PCBs); (d) the Hazardous Materials Transportation Act (HMTA), 49 U.S.C. §1801 et seq.; (e) the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), 7 U.S.C. §136 et seq.; (f) the Clean Air Act, 42 U.S.C. §7401 et seq.; (g) the Clean Water Act, 33 U.S.C. §1251 et seq.; (h) the Emergency Planning and Community Right-to-know Act (EPCRA, SARA Title III), 42 U.S.C. §11001 et seq.; (i) the Safe Drinking Water Act, 42 U.S.C. §300f et seq.; (j) the Oil Pollution Act, 33 U.S.C. §2701 et seq.; and (k) the Endangered Species Act, 16 U.S.C. §1531 et seq.

“Environmental Permits” means all Permits required to be obtained in relation to the Leased Premises pursuant to Environmental Laws.

“EPC Contract Condition Precedent” means that PSE&G shall have entered into a legally binding contract for the construction of the Solar Facility, which contract shall not have been disapproved by the staff of the NJBPU or the New Jersey Division of Rate Counsel pursuant to the BPU Order.

“ET” means eastern standard time or eastern daylight saving time, as applicable.

“Event of Default” has the meaning set forth in Section 14.1.

“Financing Party” means the holder, trustee or beneficiary of any mortgage, deed of trust or other indenture that constitutes, or any security interest given in connection therewith that together constitute, a lien upon (a) this Lease and the leasehold estate hereby created and PSE&G’s interest in the Solar Facility, in the case of PSE&G or (b) the Lessor Property, in the case of Lessor.

“Force Majeure” means an event that is not within the reasonable control, and without the fault or negligence, of the claiming Party, and that by the exercise of due diligence such claiming Party is unable to prevent or overcome. The following shall be conclusively deemed to constitute Force Majeure, regardless of whether they satisfy the requirements of the immediately preceding sentence: acts of God; fire; explosion; flood; windstorm or other unusually severe weather condition; civil disturbance; strike, work stoppage or other labor dispute; labor or material shortage; embargo; insurrection; riot; sabotage; breakdown of or damage to plants, equipment or facilities; a Change in Law; and action or restraint by court order or Governmental Entity (so long as the claiming Party has not applied for or sought or assisted in applying for or seeking such government action).

“Governmental Entity” means a federal, state, local or foreign governmental authority; a state, province, commonwealth, territory or district thereof; a county or parish; a city, town, township, village or other municipality; a district, ward or other subdivision of any of the foregoing; any executive, legislative or other governing body of any of the foregoing; any agency, authority, board, department, office, commission, committee, council or other administrative body of any of the foregoing, including the New Jersey Board of Public Utilities; and any court or other judicial body.

“Grading Plan” has the meaning set forth in Section 2.4.

“Hazardous Materials” means any chemical, material or substance, regardless of its form or nature, defined as or included in the definition of “hazardous substances,” “hazardous wastes,” “hazardous materials,” “extremely hazardous waste,” “restricted hazardous waste,” “toxic substances,” “solid waste” or words of similar import under any applicable Environmental Laws, and leachate that contains any of the foregoing.

“Improvements” means the Solar Facility, the electrical interconnection facilities and all other improvements, machinery, equipment, fixtures, facilities, structures and personal property of every kind and description that may be erected or placed on the Leased Premises by PSE&G or its contractors during the Term of this Lease.

“including” means “including without limitation” (and grammatical variants such as “include” have correlative meanings).

“Indemnified Person” has the meaning set forth in Section 13.3.

“Indemnify” means to indemnify, protect, defend and hold harmless (and grammatical variants such as “Indemnity” and “Indemnification” have correlative meanings).

“Indemnifying Party” has the meaning set forth in Section 13.3.

“Interest Rate” means, for any date, the lesser of (a) the sum of the per annum rate of interest equal to the prime lending rate as may from time to time be published in *The Wall Street Journal* under “Money Rates” on such date (or if not published on such day on the most recent

preceding day on which published), plus two percent (2%), and (b) the highest rate permitted by applicable Law.

“Landfill Disruption Approval” has the meaning set forth in Section 5.5(b).

“Law” means any applicable constitutional provision, statute, act, code (including the Code), law (including common law), regulation, rule, ordinance, order, writ, judgment, decree, ruling, decision or other legal or regulatory determination of a Governmental Entity having valid jurisdiction.

“Leased Premises” means the portion of the Lessor Property leased to PSE&G hereunder as more fully described in Exhibit A.

“Lessor Indemnified Parties” has the meaning set forth in Section 13.2.

“Lessor Facilities” means the existing infrastructure, equipment, systems and other facilities of Lessor on the Lessor Property including Closure and Post-Closure Improvements.

“Lessor Property” means the parcels of land in Block \_\_\_ Lot \_\_\_ in the municipality of \_\_\_\_\_ owned by Lessor, having a street address of \_\_\_\_\_.

“Lien” means all burdens, encumbrances and defects affecting the ownership of an asset, including (a) liens, security interests, mortgages, deeds of trust, pledges, conditional sale or trust receipt arrangements, consignments or bailments for security purposes, finance leases, or other encumbrances of any nature whatsoever securing any obligation, whether such interest is based on common law, statute or contract; (b) any rights of first refusal or any restriction on use, voting, transfer, receipt of income or exercise of any other attribute of ownership; and (c) any other reservations, exceptions, covenants, conditions, restrictions, leases, subleases, licenses, easements, servitudes, occupancy agreements, equities, charges, assessments, defects in title, liabilities, claims, agreements, obligations, encroachments and other burdens, and other title exceptions and encumbrances affecting property of any nature, whether accrued or unaccrued, absolute or contingent, legal or equitable, real or personal, or otherwise.

“Losses” means losses; liabilities (other than liabilities arising under any contract between a Party and any Affiliate or Representative of such Party); causes of action; assessments; cleanup, removal, response, remediation and restoration obligations; judgments; awards; damages, whether to persons or property; natural resource damages; fines; fees; penalties; assessments; and costs and expenses (including litigation costs and attorneys’ and experts’ fees and expenses arising out of any Proceeding); in each case to the extent arising out of, caused by or in any manner related to a Claim.

“Lost Energy Damages” has the meaning set forth in Section 14.2(e).

“NJDEP” means the New Jersey Department of Environmental Protection, its Commissioner, bureaus, divisions and sub-divisions.

“NJBPU” means the New Jersey Board of Public Utilities, its President and Commissioners, bureaus, divisions and sub-divisions and its regulatory staff.

“Non-Defaulting Party” has the meaning set forth in Section 14.1.

“Non-PSE&G Hazardous Materials” has the meaning set forth in Section 5.5(e).

“Permit” means any permit, certificate, license, franchise, authorization, approval, variance, exemption, concession, lease, instrument or order of any Governmental Entity.

“Permitted Encumbrances” means the Liens described on Exhibit B.

“Person” means any Entity or natural person.

“Proceeding” means a judicial, administrative or arbitral proceeding (including a lawsuit or an investigation by a Governmental Entity), commencing with the institution of such proceeding through the issuance, service or delivery of the applicable Claim or other applicable event.

“Property” means the Leased Premises and the Improvements.

“PSE&G Hazardous Materials” has the meaning set forth in Section 5.5(d).

“PSE&G Indemnified Parties” has the meaning set forth in Section 13.1.

“Representative” means, with respect to any Person, each managing member, manager, managing partner, director, officer, employee, agent, consultant (including consulting engineers), advisor (including counsel and accountants), contractor (including, in the case of PSE&G, the Contractor and the operator) and other representative of such Person, and each other Person performing services for or on behalf of such Person.

“Restoration Obligations” has the meaning set forth in Section 3.3.

“Scheduled Expiration Date” means a date that is twenty (20) years from the COD, subject to Section 3.1(b).

“Solar Facility” means the solar powered electric generating facility including photovoltaic panels, conduit, inverters, transformers, electrical interconnections, and associated equipment owned by PSE&G to be installed hereunder.

“Third Party” means, with respect to a Party, any Person other than such Party, its Affiliates and its Representatives.

“Work” means all of the work and activities reasonably related to designing, constructing, installing, modifying, removing, testing, operating and maintaining the Solar Facility, and all Restoration Obligations.

1.2. **References.** References in this Lease to Exhibit, Schedule, Article, or Section numbers shall be to Exhibits, Schedules, Articles, or Sections of this Lease, unless expressly stated to the contrary. References in this Lease to “hereby,” “herein,” “hereinafter,” “hereof,” “hereunder,” and words of similar import shall be to this Lease in its entirety and not only to the particular Exhibit, Schedule, Article, or Section in which such reference appears.

## Article 2. LEASE OF LEASED PREMISES

2.1. **Lease of Leased Premises.** In consideration of the covenants and agreements herein made by the Parties, Lessor hereby lets, demises and leases to PSE&G, and PSE&G hereby leases from Lessor, the Leased Premises for the Term upon the terms and conditions herein provided. Lessor hereby also grants to PSE&G, for a period coterminous with this Lease, a non-exclusive right of way and easement to use and access such Leased Premises across or through other portions of the Lessor Property or any surrounding or nearby premises owned or leased by Lessor as reasonably necessary or convenient to gain access to such Leased Premises.

2.2. **Quiet Enjoyment.** Lessor covenants and agrees that PSE&G shall enjoy quiet use, enjoyment and possession of the Leased Premises for the Term, subject to the provisions of this Lease, without interference or molestation by anyone claiming by, through or under Lessor. Lessor shall protect and defend the right, title, and interest of PSE&G hereunder from any adverse claim. Lessor will not initiate or conduct activities that may damage, impair or otherwise adversely affect the Solar Facility or the function thereof (including activities that may adversely affect the Solar Facility’s exposure to sunlight) and shall promptly cease any such activities upon notice from PSE&G.

2.3. **Contractor.** Lessor acknowledges that PSE&G may engage one or more contractors (each, a “Contractor”) to conduct the Work. Lessor agrees that the Contractor and its subcontractors shall be permitted to enjoy the rights granted to PSE&G under this Lease in connection with their performance of such services for PSE&G, subject to the terms and conditions of this Lease.

2.4. **Site Preparation.** Lessor shall deliver the Leased Premises to PSE&G on the Effective Date clean and free of debris, with any grass mowed and trees and shrubs trimmed. Lessor shall have properly closed the landfill located at the Lessor Property in accordance with the Closure and Post-Closure Plan and all applicable Environmental Laws, all Closure and Post-Closure Improvements shall be installed and in good operating condition and Lessor shall be in compliance with all Environmental Laws pertaining to such landfill, including all such laws pertaining to closure and post-closure care or maintenance of such landfill. Promptly after the Effective Date, and except as set forth in Section 6.3, PSE&G shall, at PSE&G’s cost, test, verify or prove the location as suitable for the construction of the Solar Facility, as determined by PSE&G in its sole discretion. Lessor will cooperate in any reasonable manner requested by PSE&G in connection with the foregoing. PSE&G shall promptly advise Lessor if the Leased Premises is not suitable for the Solar Facility and PSE&G shall be entitled to terminate this Lease at no cost to PSE&G. If PSE&G deems the site suitable, PSE&G shall perform all site preparation work on the Leased Premises. Lessor shall take all actions necessary to prepare and

deliver to the Leased Premises a sufficient quantity of clean fill material meeting the requirements of applicable Environmental Laws and the NJDEP for “clean fill” (and as provided for in the approved material acceptance plan) to be used for grading purposes in accordance with any applicable NJDEP requirements and the grading plan attached hereto as Exhibit \_\_\_\_ (the “Grading Plan”). Lessor shall ensure such fill material delivered to the Property and accepted by Lessor is used for the grading of the Leased Premises until same is in compliance with the Grading Plan. If the grading is not complete by [date], PSE&G shall have the right, without charge, to import and deposit clean fill in accordance with the approved material acceptance plan to complete the grading of the Leased Premises.

2.5. **Additional Fill.** Lessor shall be permitted to add fill material in areas outside the Leased Premises provided same does not necessitate any change to the grading of the Leased Premises as shown on the Grading Plan (Exhibit \_\_\_\_ ) or interfere with the interconnection conduit from the Solar Facility to the point of interconnection outside the Leased Premises. Lessor shall ensure all such fill material meets the requirements of Environmental Laws and the NJDEP for “clean fill” and shall perform any such fill activities in accordance with all Environmental Laws including N.J.S.A. 13:1E-125.1, if applicable. Lessor shall be solely responsible for: (a) obtaining all required Environmental Permits and other approvals required for Lessor’s fill activities; (b) investigating and remediating all Contamination resulting from Lessor’s fill activities; and (c) the performance of all remedial actions, including all closure and post-closure care and maintenance.

### Article 3. TERM

#### 3.1. Term.

(a) Subject to the Conditions Precedent, the Lease shall commence on the Effective Date and terminate the first to occur of (i) the Scheduled Expiration Date and (ii) the date on which the Lease is terminated in accordance with its terms (“Term”), subject to Section 3.1(b).

(b) Provided no Event of Default with respect to PSE&G exists, PSE&G shall have the right to extend the Term for up to two (2) periods of five (5) years each, on all the same terms and conditions hereof, and the rent shall continue to increase annually in accordance with Exhibit C. To exercise the option, PSE&G shall notify Lessor at least three (3) months prior to the end of the Term.

#### 3.2. Rent.

(a) Rent shall be payable quarterly in arrears beginning on the tenth (10<sup>th</sup>) day of the fourth (4<sup>th</sup>) month following the COD. The first rental payment shall be pro-rated to account for a partial month (if any) of commercial operation. The rent for such period shall be set forth on Exhibit C.

(b) During the Term, there shall be no adjustment or “true-up” of the rental payment or the calculation thereof to account for the actual annual energy production of the Solar Facility.

3.3. **Removal of Solar Facility.** Except as set forth in Section 3.4, PSE&G shall remove the Solar Facility (except for below-grade foundations, concrete piers/footings and equipment pads) from the Leased Premises and restore the Leased Premises to its condition prior to the Lease as nearly as reasonably practicable, reasonable wear and tear excepted, within twelve (12) months from the end of the Term; provided, however, PSE&G shall not be required to correct or remediate any condition created therein by Lessor or any third party. PSE&G’s obligations under this Section 3.3 are collectively referred to herein as the “Restoration Obligations.”

3.4. **Purchase Option.** Lessor shall have the option to purchase the Solar Facility at the end of the Term upon such price and terms to be mutually agreed upon by the Parties. To exercise the option, Lessor shall, at least twelve (12) months prior to the expiration of the Term, deliver written notice to PSE&G setting forth the proposed purchase and sale price. The option will automatically expire if the Lessor fails to give a timely notice. If the Parties are unable to reach a definitive purchase and sale agreement prior to the end of the Term, the purchase option shall expire and PSE&G shall remove the Solar Facility in accordance with Section 3.3. If Lessor exercises its option to purchase, PSE&G shall be released from all Restoration Obligations hereunder and Lessor shall be responsible for compliance with all Laws associated with the transfer, ownership, operation, maintenance and decommissioning of the Solar Facility.

#### Article 4. OWNERSHIP OF IMPROVEMENTS

4.1. **Ownership of Improvements.** Lessor acknowledges PSE&G is the sole and exclusive owner of the Solar Facility, the electricity generated thereby and any SRECs attributable thereto.

4.2. **Solar Facility Not a Fixture.** Notwithstanding that the Solar Facility may be attached, affixed to or incorporated in, or made part of the Leased Premises, the Parties agree that the Solar Facility shall not be, become or be deemed a “fixture” or otherwise part of the real property interests constituting the Leased Premises and shall not be or become subject to any Lien created by, through, or under Lessor. The Solar Facility is and the Lessor and PSE&G intend: (a) the Solar Facility will, at all times, be personal property and not a “fixture” as defined by Law; (b) to the extent the Solar Facility may be connected to the real property, the Solar Facility is not intended to be connected permanently to the real property and may be removed or disconnected without materially damaging the real property; and (c) the real property’s prior use and purpose will not be changed by the Solar Facility or by any temporary connection of Solar Facility to the real property.

4.3. **Collateral Assignment.** PSE&G may mortgage, pledge, grant security interests, or otherwise encumber the Solar Facility and its interest in this Lease in connection with any construction or permanent financing or refinancing obtained by PSE&G in connection with the installation or operation of the Solar Facility. Lessor agrees to cooperate with PSE&G’s efforts to obtain financing and agrees to execute a written consent to a collateral assignment of this

Lease to any Lender (or agent acting on behalf of Lenders) providing financing to PSE&G in form and substance reasonably acceptable to Lessor, PSE&G and such Lender (or agent).

#### **Article 5. USE, MAINTENANCE AND ALTERATIONS**

5.1. **Permitted Uses.** PSE&G may use the Leased Premises to conduct the Work and all activities reasonably related to the purposes of the Lease. In addition, PSE&G may use and occupy the Lessor Property in a manner that does not materially interfere with Lessor's use of the Lessor Property for (a) the conduct of the Work, and (b) any other reasonably related and legally permitted use. Lessor shall not create or permit, on the Lessor Property or any other property owned or controlled by Lessor or its affiliate, any interference with PSE&G's exclusive and continuous right to unobstructed direct sunlight for operation of the Solar Facility. Prior to commencing the construction of the Solar Facility, PSE&G shall provide to Lessor a written plan(s) for the same in sufficient detail to enable the Lessor to reasonably assess the impact of the Solar Facility on the landfill located on the Leased Premises and on the closure or post-closure care and maintenance of such landfill, including the Closure and Post-Closure Improvements. Lessor shall have the right within twenty (20) days of receipt of such plan(s) to provide written comment to PSE&G with respect to any such impact. Failure by Lessor to submit such comments to PSE&G within such twenty (20) day period shall be deemed a waiver by Lessor of its right to comment under this Section 5.1.

5.2. **Lessor Access Rights.** Upon written notice to PSE&G (unless an emergency situation exists), Lessor may access the Leased Premises for the purpose of (a) owning, operating and maintaining the Lessor Facilities, and (b) exercising its rights and remedies under this Lease, provided such access shall not interfere with PSE&G's right to use the Leased Premises or obstruct direct sunlight to the Solar Facility.

5.3. **Insurance.** PSE&G and Lessor shall carry and maintain throughout the Term the insurance coverage described in Exhibit D.

5.4. **Maintenance; Alterations.** PSE&G shall maintain the Improvements in good condition and repair consistent with sound engineering and operating practices. PSE&G, in its sole discretion, shall have the right from time to time to make, or cause to be made, at its sole cost and expense, repairs, improvements, additions, alterations and changes, in or to, or to demolish or remove, the Improvements to the extent it deems necessary or desirable to carry on any activity or use permitted by Section 5.1. PSE&G shall be responsible for routine ground maintenance (e.g., grass cutting, weed control, snow removal from solar panels) within the Leased Premises, provided however, that, except as specifically set forth in this Section 5.4, PSE&G shall have no obligation or responsibility whatsoever for closure or post-closure maintenance of the landfill located at the Leased Premises or for the operation, maintenance, repair or replacement of the Closure and Post-Closure Improvements.

### 5.5. Compliance with Laws.

(a) The Parties shall comply in all material respects with all Laws, including Environmental Laws, and all Permits (and comply with all valid orders of Governmental Entities under such Laws and Permits).

(b) Except as specifically set forth in Section 5.5(d) hereof, Lessor shall comply at its sole cost and expense with all applicable Environmental Laws pertaining to the Lessor Property, including all such laws and regulations relating to or requiring closure and post-closure care or maintenance or other investigation or remediation of the landfill located at the Lessor Property and shall apply for, obtain, maintain in full force and effect and comply with all Environmental Permits in respect of such closure or post-closure care or maintenance or other investigation or remediation work. Without limiting the generality of the foregoing, Lessor shall (i) cooperate with PSE&G with regard to the preparation of materials as required to secure NJDEP approval of a Closure and Post-Closure Plan for such landfill if such a plan is not in existence or in conformance with Environmental Laws as of the date hereof or a modification of an existing plan, in each case in a manner consistent with the construction, installation, operation, maintenance, repair and replacement of the Solar Facility on the Leased Premises; (ii) submit such materials to the NJDEP in a timely manner and implement such Closure Plan and Post-Closure Plan, as the same may be modified pursuant to (i) hereof, in accordance with the written approval of the NJDEP and obtain from the NJBPU an Order or other written determination approving the landfill on the Leased Premises as a “properly closed sanitary landfill” as such phrase is defined and used in N.J.S.A. 48:3-87(t); (iii) perform all assessment, investigation, sampling, monitoring, abatement, encapsulation, cleanup, removal and remediation of Contamination on, at, under or emanating from the Leased Premises required under Environmental Laws or the NJDEP, including all such work or actions required for closure and post-closure care and maintenance of the landfill on the Leased Premises, so as to obtain a Response Action Outcome issued by a Licensed Site Remediation Professional, a No Further Action Letter issued by the NJDEP (as such terms are hereinafter defined) or other written approval of the NJDEP stating that all obligations for assessment, investigation, sampling, monitoring, abatement, encapsulation, cleanup, removal, remediation, or closure have been satisfied; (iv) operate, maintain, repair and replace, as the case may be, all Closure and Post-Closure Improvements, perform all groundwater or leachate remediation or monitoring, maintain all required records or logs, perform all biennial certifications, and post and maintain in full force and effect all required financial assurances relating to the closure or post-closure care and maintenance of the landfill on the Leased Premises; (v) promptly perform, install, operate and maintain any additional investigative, remedial or closure or post-closure care or maintenance actions or work on the Leased Premises pursuant to Environmental Laws, or any modification of or addition to the Closure and Post-Closure Improvements; (vi) prepare, obtain NJDEP approval of, record and thereafter maintain in full force and effect any Deed Notice or modification to any existing Deed Notice required under Environmental Laws for the closure and post-closure care of the landfill present on the Leased Premises and the installation, operation, maintenance, repair and

replacement of Closure and Post-Closure Improvements, and/or for PSE&G to construct, operate and maintain the Solar Facility on the Leased Premises; (vii) cooperate with PSE&G in applying for any minor or major landfill disruption permit or approval (“Landfill Disruption Approval”) required under Environmental Laws in order for PSE&G to perform the Engineering Review pursuant to Section 15.1 hereof and/or to construct, operate, maintain, repair and replace the Solar Facility on the Leased Premises, including by allowing PSE&G to submit such applications in Lessor’s name; and (viii) comply with all terms and conditions of any such major Landfill Disruption Approval relating to the operation, maintenance, repair, replacement, modification or alteration of the Closure and Post-Closure Improvements, provided that PSE&G shall be responsible to construct and operate the Solar Facility in accordance with any such Landfill Disruption Approval. Lessor shall perform, or cause its employees, contractors or agents to perform, all actions necessary to comply with the provisions of this Section 5.5(b) in a good and workmanlike manner in accordance with all applicable Environmental Laws (or permits issued thereunder) and so as not to interfere with PSE&G’s use of the Leased Premises as contemplated by this Lease.

(c) PSE&G shall promptly deliver to Lessor, and Lessor shall promptly deliver to PSE&G, true and complete copies of any and all notices or correspondence or requests from, or required to be submitted to, any Governmental Entity or Third Party relating to non-compliance with any Laws or the release, disposal, use, storage, generation, treatment, transportation or handling of Hazardous Materials on, in, under or about the Leased Premises or Lessor Property.

(d) PSE&G shall not use, store, generate, treat, transport or handle, any Hazardous Materials on, in, under or about the Lessor Property except in the normal course of construction, operation or maintenance of the Solar Facility and in compliance in all material respects with applicable Environmental Laws and Environmental Permits. Promptly after becoming aware of the presence of any Hazardous Materials in the Environmental Review on, in, under or migrating from the Leased Premises that was stored, released, spilled or discharged to or on the Leased Premises, as applicable, by PSE&G (“PSE&G Hazardous Materials”), PSE&G shall, at its sole cost, liability and expense, take all actions required by Environmental Laws or pursuant to any valid orders, directives, notices or agreements issued by or entered into with a Governmental Entity, in coordination with Lessor: (i) to remove or treat such PSE&G Hazardous Materials and to treat or restore the Environment to substantially the same condition the Environment was in prior to such release, spill or discharge of such PSE&G Hazardous Materials; and (ii) to prevent further or renewed releases, spills, discharges or spread of PSE&G Hazardous Materials.

(e) Notwithstanding the provisions of Section 5.5(d), PSE&G shall have no obligation to remove or treat any Hazardous Materials on, under or migrating from the Leased Premises that were not stored, released, spilled or discharged to or on the Leased Premises by PSE&G (“Non-PSE&G Hazardous Materials”), or to treat, restore or replace any soil, water or other portions of the Environment to any condition other than that

existing immediately prior to such release, spill or discharge of PSE&G Hazardous Materials. If, in the performance of its obligations under Section 5.5(d), PSE&G should perform any removal, treatment, restoration or replacement of Non-PSE&G Hazardous Materials, either (i) because PSE&G is required to do so by Environmental Laws or pursuant to any valid orders, directives, notices or agreements issued by or entered into with a Government Entity or (ii) because it is not reasonably practicable or feasible to perform its obligations under Section 5.5(d) without performing such additional actions, then Lessor shall, within twenty (20) Business Days of its receipt of an invoice from PSE&G, reimburse PSE&G for any costs, expenses or other amounts reasonably incurred by PSE&G in performing such additional actions; provided, however, PSE&G shall not perform any removal, treatment, restoration or replacement of Non-PSE&G Hazardous Materials without giving Lessor at least thirty (30) Days' (unless more timely action is required by order of any applicable Governmental Entity) prior notice of the condition or the order, directive, notice or agreement giving rise to the necessity for such removal, treatment, restoration or replacement of Non-PSE&G Hazardous Materials, specifying the particulars thereof, and permitting Lessor a reasonable opportunity to perform such removal, treatment, restoration or replacement of Non-PSE&G Hazardous Materials on PSE&G's behalf (at Lessor's sole cost and expense).

(f) In all instances in which PSE&G or any Representative is permitted to store or otherwise use or handle Hazardous Materials pursuant to Section 5.5, such Hazardous Materials shall be handled, stored, treated or used in compliance in all material respects with all applicable Environmental Laws and Environmental Permits and in such a manner as not to subject Lessor to liability or any permitting requirements for the treatment, storage or disposal of Hazardous Materials or otherwise under applicable Laws.

(g) If PSE&G or any other Person discovers the presence of any Hazardous Materials (other than PSE&G Hazardous Materials) on, in, under or migrating from the Leased Premises that was stored, released, spilled or discharged to or on the Leased Premises, as applicable, after the Effective Date by an Entity other than PSE&G, Lessor shall, at its sole cost, liability and expense, take all actions that may be required by Environmental Laws or pursuant to any valid orders, directives, notices or agreements issued by or entered into by Lessor with a Governmental Entity under any Environmental Laws relating thereto, in coordination with PSE&G and in a manner so as to minimize interference with the operation of the Solar Facility. In addition, during the Term, Lessor shall comply with all valid orders of any Governmental Entity relating to the presence or release of any Hazardous Materials (other than PSE&G Hazardous Materials) on, in, under or migrating from the Leased Premises.

(h) Should the termination of this Lease, any sale or conveyance of the Leased Premises by the Lessor during the term of the Lease, or any other transaction or event occurring during the term of the Lease and involving "closing operations" or a "change in ownership" or "transferring of ownership or operations" of Lessor or the Leased Premises, subject the Leased Premises to the compliance requirements of the New Jersey Industrial Site Recovery Act, N.J.S.A. 13:1K-6, et seq., and the rules and regulations

promulgated thereunder (“ISRA”), Lessor shall be solely responsible to comply therewith (except to the extent such compliance with ISRA is caused or necessitated by the release, spillage or discharge of PSE&G Hazardous Materials to, on, in, under or migrating from the Leased Premises) and Lessor shall prior to the termination of the Lease, sale, conveyance or other transaction or event: (i) obtain a Response Action Outcome issued by a Licensed Site Remediation Professional or a No Further Action Letter issued by the NJDEP; (ii) submit to the NJDEP a Remediation Certification, together with an estimate of the cost of remediation prepared or certified by a Licensed Site Remediation Professional, obligating Lessor to comply with the requirements or ISRA, or (iii) obtain other such approvals from the NJDEP, reasonably satisfactory to PSE&G, demonstrating that Lessor has complied with the requirements of ISRA. If Lessor issues a Remediation Certification in order to comply with this Section 5.5(h), Lessor shall post and maintain in full force and effect a Remediation Funding Source in form and amount required by ISRA and shall thereafter promptly and diligently take all actions required under ISRA to obtain a Response Action Outcome from a Licensed Site Remediation Professional or a No Further Action Letter from the NJDEP. Notwithstanding the provisions of Section 13.2 and the exception set forth herein, Lessor shall defend, indemnify and hold harmless PSE&G for any costs, expenses, losses or damages (including attorneys’ fees and other costs of defense, fines, penalties and natural resource damages) arising from or associated with compliance or any failure to comply with ISRA as described in this subsection. If Lessor believes that compliance with ISRA is not required at or by reason of the termination of the Lease, sale or conveyance of the Leased Premises or other transaction or event, Lessor shall supply to PSE&G a written opinion of a licensed New Jersey attorney, in form and substance reasonably satisfactory to PSE&G, that compliance with ISRA is not required. The terms change in ownership, transferring ownership or operations, closing operations, Response Action Outcome, No Further Action Letter, Licensed Site Remediation Professional, Remediation Certification, and Remediation Funding Source, as used herein, shall have the meanings given to them under ISRA and/or N.J.A.C. 7:26B-1.3 or N.J.A.C. 7:26B-3.4.

5.6. **Security.** PSE&G shall be entitled to install such security measures as it deems advisable or necessary to control and restrict access to the Leased Premises, Solar Facility and Improvements including fencing with locked gates and remote monitoring equipment.

5.7. **Notice of Regulatory Actions.** Lessor shall give PSE&G written notice thirty (30) days prior to the date Lessor intends to make any regulatory filing or request regulatory action with respect to the status or operation of the landfill. If such regulatory filing or requested action has the potential to negatively impact the Solar Facility or PSE&G’s rights or obligations under this Lease, such filing or request shall be subject to PSE&G’s prior approval, and Lessor shall incorporate PSE&G’s comments into the filing or request and cooperate with PSE&G to avoid any breach of this Lease and any adverse impact on the Solar Facility.

## Article 6. UTILITIES AND SERVICES

6.1. **Electricity.** PSE&G shall have the right to arrange for electrical service as may be needed or required in connection with the installation, construction and long-term illumination and monitoring of the Solar Facility.

6.2. **Other Services.** At no cost to PSE&G, Lessor shall conduct a one-time mowing and removal of the existing weeds and brush growth at the Leased Premises (excluding any tree clearing which will be performed by PSE&G or its Contractor).

6.3. **Coordination.** Lessor shall coordinate with PSE&G and its Contractor (as such term is hereinafter defined) regarding access to the Leased Premises and scheduling construction activities.

## Article 7. FORCE MAJEURE

7.1. **Force Majeure.** If either Party is rendered unable by Force Majeure to carry out, in whole or part, its obligations (other than the obligation to make payments that are due and outstanding) under this Lease, such Party shall give notice orally to the other Party as soon as reasonably practicable, followed within five (5) Business Days thereafter by a written notice setting forth, in reasonable detail, the cause or causes constituting such Force Majeure. The obligations of the Party affected by such Force Majeure (other than the obligation to make payments then due or becoming due with respect to performance prior to the event) shall be suspended to the extent made necessary, and for no longer than is required, by the cause or causes constituting such Force Majeure. The other Party, within ten (10) Business Days after receipt of such written notice, may give written notice that it disputes the existence of Force Majeure.

7.2. **Remedy for Force Majeure.** The Party affected by the Force Majeure shall initiate and continue commercially reasonable good faith efforts to remedy the Force Majeure with all reasonable dispatch; provided, however, the settlement of strikes, lockouts or other labor disputes shall be totally within the sole discretion of the affected Party.

7.3. **Continuance of Force Majeure.** If an event of Force Majeure affecting performance by either Party persists for a continuous period of more than three (3) months, the other Party shall have the right, upon not less than one (1) month's prior written notice, to terminate this Lease and the obligations of the Parties hereunder, except those rights and obligations specifically stated to continue after termination.

## Article 8. CONDEMNATION; CASUALTY

8.1. **Condemnation.** If Lessor receives notice of a proposed taking by eminent domain of any part of the Leased Premises, Lessor will notify PSE&G of the proposed taking promptly upon receiving said notice and PSE&G will have the option: (a) if such condemnation interferes with PSE&G's operations, to terminate this Lease, and thereafter neither Party will have any liability or obligation hereunder, except for such obligations as expressly survive expiration or

termination, and any monies owed by either Party to the other up to the date of such taking shall be paid by the date of such taking; or (b) to remain in possession of that portion of the Leased Premises that will not be taken, in which event there shall be an equitable adjustment in rent on account of the portion of the Leased Premises so taken. With either option, PSE&G shall have the right to contest the taking and directly pursue an award for the Solar Facility, its Improvements, any costs of moving or relocation and any other award to which PSE&G may be entitled.

8.2. **Casualty.** At any time during the Term of this Lease, if fire or other casualty to all or part of the Improvements results in (a) a total destruction of the Improvements, or (b) damage to all or part of the Improvements that materially impairs PSE&G's use of the Improvements (as determined in good faith by PSE&G), then PSE&G shall have the right, upon not less than three (3) Business Days' prior written notice, to terminate this Lease and the obligations of the Parties hereunder, except those rights and obligations specifically stated to continue after termination. PSE&G shall remove any damaged or destroyed Improvements from the Leased Premises to the extent caused by such fire or casualty.

#### **Article 9. LIMITATION OF REMEDIES AND LIABILITY**

9.1. **Limitation of Remedies.** THE PARTIES CONFIRM THAT THE EXPRESS REMEDIES AND MEASURES OF DAMAGES PROVIDED IN THIS LEASE SATISFY THE ESSENTIAL PURPOSES HEREOF. FOR BREACH OF ANY PROVISION FOR WHICH ONE OR MORE EXPRESS REMEDIES OR MEASURE OF DAMAGES ARE HEREIN PROVIDED, SUCH EXPRESS REMEDIES OR MEASURE OF DAMAGES SHALL BE THE SOLE AND EXCLUSIVE REMEDIES, THE OBLIGOR'S LIABILITY SHALL BE LIMITED AS SET FORTH IN SUCH PROVISION, AND ALL OTHER REMEDIES OR DAMAGES AT LAW OR IN EQUITY ARE HEREBY WAIVED.

9.2. **Liquidated Damages.** TO THE EXTENT ANY DAMAGES REQUIRED TO BE PAID HEREUNDER ARE LIQUIDATED, THE PARTIES ACKNOWLEDGE THAT THE DAMAGES ARE DIFFICULT OR IMPOSSIBLE TO DETERMINE, OTHERWISE OBTAINING AN ADEQUATE REMEDY IS INCONVENIENT, AND THE LIQUIDATED DAMAGES CONSTITUTE A REASONABLE APPROXIMATION OF THE HARM OR LOSS.

#### **Article 10. TAXES**

10.1. **Real Property Taxation.** The Parties agree that, even if the Solar Facility or portions thereof are temporarily attached or affixed to or incorporated in or made part of the Leased Premises, same shall not be or become fixtures or otherwise part of the real property interests. The Solar Facility is and the Parties intend: (a) the Solar Facility will, at all times, be personal property and not a "fixture" as defined by Law; (b) to the extent the Solar Facility may be connected to the real property, the Solar Facility is not intended to be connected permanently to the real property and may be removed or disconnected without materially damaging the Solar Facility or the real property; and (c) the real property's prior use and purpose will not be changed

by the Solar Facility or by any temporary connection of Solar Facility to the real property. The Parties further acknowledge the Solar Facility is not intended to be included in the assessed valuation of the Lessor Property for real property taxation purposes.

10.2. **PSE&G's Obligations.** PSE&G shall be responsible for and pay directly to the taxing authority all personal property taxes, possessory interest taxes, business and license taxes and fees, service payments in lieu of such taxes or fees, annual and periodic license and use fees, excises, assessments, bonds, levies, fees and charges of any kind assessed, levied, charged, confirmed, or imposed by any Governmental Entity due to PSE&G's ownership and use of the Solar Facility. PSE&G may contest the amount or validity of real estate taxes and special assessments imposed on the Solar Facility in any manner permitted by law, in its own name and whenever necessary in the name of Lessor, provided PSE&G does so with due diligence and in good faith, that such contest shall be without cost, liability or expense to Lessor and that no tax compromise entered into by PSE&G shall extend beyond the term of this Lease. Any refunds or rebates of taxes paid by PSE&G hereunder shall belong to PSE&G.

10.3. **Lessor's Obligations.** Lessor shall be responsible for and pay all real estate taxes, assessments or other charges imposed by any Governmental Entity relating to the Lessor Property and Lessor Facilities.

## Article 11. REPRESENTATIONS AND WARRANTIES

11.1. **Representations and Warranties of Each Party.** As a material inducement to entering into this Lease, each Party, with respect to itself, hereby represents and warrants to the other Party as of the Effective Date as follows:

- (a) it is duly organized, validly existing and in good standing under the Laws of the jurisdiction of its formation and is qualified to conduct its business in those jurisdictions necessary to perform this Lease;
- (b) the execution, delivery and performance of this Lease are within its powers, have been duly authorized by all necessary action and do not violate any of the terms or conditions in its charter, organizational or governing documents or any contract to which it is a party or by which any of its properties is bound or any Law, rule, regulation, order, writ, judgment, decree or other legal or regulatory determination of any Governmental Entity applicable to it;
- (c) this Lease constitutes a legal, valid and binding obligation of such Party enforceable against it in accordance with its terms, subject to bankruptcy, insolvency, reorganization and other Laws affecting creditors' rights generally, and with regard to equitable remedies, to the discretion of the court before which proceedings to obtain same may be pending;
- (d) no bankruptcy, insolvency, reorganization, receivership or other arrangement proceedings are pending or being contemplated by it or, to its knowledge, threatened against it; and

(e) no suits, proceedings, judgments, rulings or orders by or before any court or any other Governmental Entity that could reasonably be expected to materially adversely affect the ability of such Party to perform this Lease are pending or, to its knowledge, threatened or contemplated.

**11.2. Representations and Warranties of Lessor.** Lessor represents and warrants to PSE&G:

(a) Lessor has good and indefeasible title to the Lessor Property, free and clear of all Liens, except those Permitted Encumbrances as set forth in Exhibit B;

(b) Lessor has obtained the consent of all third parties required to permit it to enter into this Lease;

(c) Lessor has received no actual or constructive notice of any condemnation or eminent domain proceedings or negotiations for the purchase of the Lessor Property or any part thereof in lieu of condemnation;

(d) the Lessor Property comprises a total of \_\_\_\_\_ acres, of which approximately \_\_\_\_ is suitable for Solar Facility, for an estimated solar capacity of \_\_\_\_ kilowatts;

(e) the zoning classification of the Lessor Property is \_\_\_\_\_, which is compatible with the construction and operation of the Solar Facility; and

(f) there is no condition or restriction affecting the Lessor Property (including the use of the property for landfill purposes and the existence and maintenance of any Closure and Post-Closure Improvements) that could be expected to restrict or adversely affect the suitability of the Leased Premises for the Solar Facility or the exposure of the Leased Premises to sunlight.

**11.3. Environmental Condition.** Lessor represents and warrants to PSE&G that: (a) Lessor is in compliance with all requirements of Environmental Laws and of the NJDEP with respect to the investigation and remediation of Contamination on, at, under or emanating from the Leased Premises and the ownership, operation, closure and post-closure care and maintenance of the landfill located on the Leased Premises; (b) Lessor has obtained and is in compliance with all Environmental Permits in connection with the ownership, occupancy, operation or use of the Leased Premises including all such Environmental Permits required or necessary for the ownership, operation or use of the landfill present on the Leased Premises or the closure and post-closure care or maintenance thereof and the construction, installation, operation, maintenance, repair and replacement of the Closure and Post-Closure Improvements; (c) no Hazardous Substances are present in the soil placed above the landfill cap present on the Leased Premises; (d) there are no asbestos-containing materials present in, on, at or under the Leased Premises; and (e) Lessor has not received any legal process, complaint, demand, directive, notice, notice of violation, citation, deficiency letter, request for information or other communication from any governmental or non-governmental body or person alleging any violation of Environmental Laws by Lessor, or any release or discharge of Hazardous Substances or Contamination on, at, under or emanating from the Leased Premises not already addressed in

full by completed or on-going closure or post-closure care or maintenance or other remediation activities, or any damage to disturbance or impairment of the Closure and Post-Closure Improvements, or imposing any requirement to perform any additional investigative or remedial actions or other closure or post-closure care or maintenance work to address Contamination on, or, under or emanating from the Leased Premises or to add to or modify the Closure and Post-Closure Improvements; (f) Exhibit E hereof is a listing of all reports, assessments, workplans, and sampling or monitoring data in Lessor's possession, custody or control referring or relating to the presence of Contamination on, at, under or emanating from the Leased Premises, the closure or post-closure care or maintenance of the landfill present on the Leased Premises and/or the design, approval, construction, operation, performance and maintenance of the Closure and Post-Closure Improvements and Lessor has provided PSE&G with copies of all such documents.

11.4. **No Other Representations or Warranties.** Each of the Parties acknowledges that it has entered into this Lease in reliance upon the express representations and warranties set forth in this Lease and not upon any other representations or warranties.

## Article 12. ADDITIONAL COVENANTS

12.1. **Compliance with Laws; Authorizations.** PSE&G covenants and agrees to comply in all material respects with all Laws and Permits in connection with the installation, operation, maintenance, repair, alteration and replacement of the Solar Facility and performance of PSE&G's Restoration Obligations. Lessor covenants and agrees to comply in all material respects with all Laws and Permits the noncompliance with which could reasonably be expected to have an adverse effect on its ability to perform its obligations under this Lease or have an adverse effect on the rights of PSE&G under this Lease. Each Party shall comply with all valid orders of any Governmental Entity relating to the ownership or operation of the Solar Facility, the Lessor Property or the Lessor Facilities, and shall obtain, maintain and keep in force all Permits necessary for it to perform its obligations under this Lease.

### 12.2. Confidentiality.

(a) In the course of performing its obligations under this Lease, each Party may obtain non-public, confidential or proprietary information regarding (i) the Solar Facility (in the case of Lessor) or the Lessor Facilities (in the case of PSE&G), and (ii) the other Party and its Affiliates. Such information that a Party receives from the other Party, whether oral, written or in any other form and whether furnished before or after the Effective Date, together with any analyses or documents prepared by the recipient Party that contains or otherwise reflects such information, is hereinafter referred to as "Confidential Information." In addition, the provisions of this Lease relating to pricing, services to be provided by Lessor and other economic terms shall also constitute "Confidential Information" as to both Parties.

(b) Confidential Information will not include (i) information that is or becomes generally available to the public otherwise than as a result of disclosure by the recipient Party or (ii) information that is already in, or subsequently comes into, the recipient

Party's possession, provided that the source of such information was not, to the recipient Party's knowledge, obligated to keep such information confidential.

(c) Each Party agrees that it (i) shall hold Confidential Information in confidence and (ii) shall not, without the other Party's prior written consent, disclose Confidential Information, directly or indirectly, in any manner whatsoever, to any other Person. Each Party shall retain exclusive rights to the Confidential Information provided by or on behalf of it, and no right or license is or shall be deemed granted by either Party to the other Party as a result of the disclosure of any Confidential Information permitted by this Section 12.2.

(d) Notwithstanding Section 12.2(c), the recipient Party may disclose Confidential Information to its representatives, employees and contractors to the extent such persons need to know such information to assist the Party in performing its obligations, or exercising its rights and remedies, under this Lease, provided that the recipient Party shall direct them to treat such information confidentially, and the recipient Party shall be liable for any breach by its representatives of any of the terms of this Lease.

(e) Upon termination of this Lease, each Party shall promptly, on receipt of written demand from the other Party, (i) return to the other Party its Confidential Information in written form provided to the recipient Party or on its behalf (and all copies thereof), and (ii) destroy all other Confidential Information of the other Party that may exist in the records of the recipient Party (whether in written, electronic or other form); provided, however, that the recipient Party may retain one copy of the other Party's Confidential Information for archival purposes only and for purposes of responding to, and complying with, requests of Governmental Entities.

(f) Notwithstanding Section 12.2(c), the recipient Party shall be entitled to disclose Confidential Information if, but only to the extent, it is legally required to be disclosed or is otherwise subject to legal, judicial, regulatory or self-regulatory requests for information or documents. The recipient Party shall give the other Party written notice as soon as practicable (which shall be prior notice where possible) of any such disclosure, and the recipient Party shall use its best efforts to obtain assurance that confidential treatment will be accorded the disclosed information.

(g) PSE&G may disclose any information related to this Lease upon the request of the NJBPU or any Governmental Entity having jurisdiction over PSE&G without notice to Lessor, and such disclosure shall not be a breach of this Lease. PSE&G will request confidential treatment of such disclosure, but can make no assurance that such request will be honored.

(h) Without prejudice to the rights and remedies otherwise available to the Parties, each Party shall be entitled to the restraint by injunction of any actual or threatened violation of the provisions of this Section 12.2, it being understood that the rights of each Party set forth in this Section 12.2 are of a special, unique and extraordinary character

and that monetary damages are not an adequate remedy for the breach by either Party of its obligations under this Section 12.2.

### Article 13. INDEMNIFICATION

13.1. **Indemnification by Lessor.** Lessor shall Indemnify PSE&G and each PSE&G Representative (collectively, the “PSE&G Indemnified Parties”) against any and all actions, claims, demands, costs and expenses, including reasonable attorneys’ fees and expenses for the defense thereof, arising from: (a) the undertaking of any inspection, monitoring, repairs, alterations or modifications of or to the Lessor Facilities by Lessor, (b) any willful or negligent act of Lessor, its agents, contractors, servants, employees, customers or invitees, in or about the Lessor Property, (c) the violation or alleged violation of any Environmental Laws or Environmental Permits by Lessor, its Representatives or any business invitee of Lessor, or the presence or release of Hazardous Materials (other than PSE&G Hazardous Materials) on, in, under or migrating from the Lessor Property or Leased Premises, and (d) the breach by Lessor of any of the covenants, of Lessor set forth in Section 5.5 or the representations and warranties set forth in Section 11.3 hereof. In case of any action or proceeding brought against a PSE&G Indemnified Party by reason of any such claim, upon notice from PSE&G, Lessor covenants to defend such action or proceeding by counsel reasonably satisfactory to PSE&G.

13.2. **Indemnification by PSE&G.** PSE&G shall Indemnify Lessor and each Lessor Representative (collectively, the “Lessor Indemnified Parties”) against any and all actions, claims, demands, costs and expenses, including reasonable attorney's fees and expenses for the defense thereof, to the extent arising from: (a) the conduct of PSE&G’s business in connection with the operation of the Solar Facility and other Improvements on the Leased Premises, (b) any willful misconduct or negligent act of PSE&G, its agents, Contractor or its subcontractors, servants, employees, customers or invitees, in or about the Leased Premises, and (c) except to the extent covered by Section 13.1, the violation or alleged violation of any Environmental Laws or Permits by PSE&G or its Representatives, or the presence or release of PSE&G Hazardous Materials on, in, under or migrating from the Leased Premises. In case of any action or proceeding brought against a Lessor Indemnified Party by reason of any such claim, upon notice from Lessor, PSE&G covenants to defend such action or proceeding by counsel reasonably satisfactory to Lessor.

#### 13.3. **Procedure.**

(a) If any PSE&G Indemnified Party or Lessor Indemnified Party (each, an “Indemnified Person”) seeks Indemnification under Section 13.1 or 13.2, respectively, in respect of a Claim that is asserted against it, such Person shall give prompt written notice of such Claim to the Party from which it seeks Indemnification (the “Indemnifying Party”), stating the nature and basis of the Claim and, to the extent known, the actual or estimated Losses claimed thereby. The failure to give such notice, however, will not affect the indemnification obligation of the Indemnifying Party unless and only to the extent such Indemnifying Party is actually prejudiced by such failure. If an Indemnified Person is made the subject of a Proceeding for which an Indemnifying Party may have an

Indemnification obligation under Section 13.1 or 13.2, the Indemnifying Party shall have the right, at its sole cost and expense, to defend such Proceeding in the name or on behalf of the Indemnified Person upon delivery to the Indemnified Person of an instrument in which the Indemnifying Person acknowledges that it is obligated under Section 13.1 or 13.2, respectively, to Indemnify the Indemnified Person against any Losses resulting therefrom. In connection with any such Proceeding, the Indemnifying Party and the Indemnified Person shall render to each other such assistance as may reasonably be required in order to ensure the proper and adequate defense of such Proceeding.

(b) Notwithstanding the foregoing, an Indemnified Person shall have the right (following notice to the Indemnifying Party) to retain its own counsel, with the reasonable fees and expenses to be paid by the Indemnifying Party, if (i) representation of such Indemnified Person by the counsel retained by the Indemnifying Party would be inappropriate because of actual or potential conflict of interests between such Indemnified Person and the Indemnifying Party; (ii) the Indemnifying Party shall have elected in writing not to employ, or failed to employ, counsel to defend such Proceeding; (iii) the Indemnifying Party shall fail to prosecute such defense with reasonable diligence; or (iv) the Indemnified Person shall have been advised by counsel chosen by it that there may be one or more legal defenses available to such Indemnified Person that are different from or additional to those available to the Indemnifying Party in such Proceeding. If the immediately preceding sentence is inapplicable (or if the Indemnified Person waives its right thereunder), the Indemnified Person shall have the right to employ separate counsel at its own cost and expense in the Proceeding and to consult with the Indemnifying Party regarding the defense thereof; provided, except as otherwise provided below, the Indemnifying Party shall at all times control such defense of such Proceeding. No settlement of any Claim or Proceeding may be made by the Indemnifying Party without the Indemnified Person's consent, which shall not be unreasonably withheld; provided such consent shall not be necessary if the settlement results in an unconditional release of the Indemnified Person without the admission by the Indemnified Person of guilt, complicity or culpability. An Indemnifying Party shall not be liable for any settlement of any Claim or Proceeding without its consent.

13.4. **Payment.** Upon a determination that an Indemnifying Party is liable for Indemnification under Section 13.1 or 13.2 (by admission of the Indemnifying Party, agreement of the Indemnifying Party and Indemnified Person, or completion of the procedures set forth in Section 13.3), the Indemnifying Party shall pay to the Indemnified Person, within ten (10) Days after such determination, the amount of the Loss Indemnified thereby. Upon the payment in full of any such Loss, the Indemnifying Party making such payment shall be subrogated to the rights of the Indemnified Person against any other Person with respect to the subject matter of such Loss and of any Claim or Proceeding relating thereto.

13.5. **Limitation on Indemnification and Liability Generally.** Notwithstanding any provisions of this Lease to the contrary, in no event shall either Party be liable to an Indemnified Person under any provision of this Lease for any lost business opportunities, or consequential,

incidental, punitive or exemplary damages incurred or suffered by an Indemnified Person; provided, however, this Section 13.5 shall not limit PSE&G's rights to Lost Energy Damages.

#### Article 14. EVENTS OF DEFAULT AND REMEDIES

14.1. **Event of Default.** An "Event of Default" shall mean the occurrence of any one or more of the following events set forth below in this Section:

- (a) any failure by either Party to pay any amount due under this Lease and not reasonably in dispute when due and such failure is not remedied within ten (10) Business Days after written notice of such failure is given to such Party by the other Party; or
- (b) any representation or warranty made by either Party in this Lease shall at any time prove to be false or misleading in any material respect, unless (i) the fact, circumstance or condition that is the subject of such representation or warranty is made true within twenty (20) Business Days after such Party became aware that it was false, incorrect or breached in any material respect (or within such longer period of time, not to exceed three (3) months, as is necessary for such Party with the exercise of diligence to cure such failure, if such failure is susceptible to being made true but cannot be cured with the exercise of diligence within such twenty (20) Business Day period, and if such Party commences within such twenty (20) Business Day period and thereafter diligently and in good faith prosecutes the curing of such failure) and (ii) such cure removes any adverse effect on the other Party of such fact, circumstance or condition being otherwise than as first represented; or
- (c) any failure by either Party to perform any obligation set forth in this Lease (other than obligations covered by Section 14.1(a) or (b) as a separate Event of Default) which is not excused by Force Majeure or the other Party's failure to perform and such failure is not cured within twenty (20) Business Days after written notice thereof is given to such Party by the other Party (or within such longer period of time, not to exceed three (3) months, as is necessary for such Party with the exercise of diligence to cure such failure, if such failure is susceptible to cure but cannot be cured with the exercise of diligence within such twenty (20) Business Day period, and if such Party commences within such twenty (20) Business Day period and thereafter diligently and in good faith prosecutes the curing of such failure); provided it shall be an Event of Default if Lessor fails to cure a breach of Section 2.2 within five (5) Days after receipt of written notice thereof; or
- (d) either PSE&G or Lessor (i) becomes insolvent or makes a transfer in fraud of creditors or makes an assignment for the benefit of creditors or admits in writing its inability to pay its debts as they become due; (ii) generally is not paying its debts as they become due; (iii) has a receiver, trustee or custodian appointed for, or to take possession of, all or substantially all of the assets of such Person, either in a proceeding brought by such Person or in a proceeding brought against such Person and such appointment is not discharged or such possession is not terminated within ninety (90) Days after the effective date thereof or such Person consents to or acquiesces in such appointment or

possession; or (iv) files a petition for relief under the United States Bankruptcy Code or any other present or future federal or state insolvency, bankruptcy or similar Law (collectively, the “Applicable Bankruptcy Law”) or an involuntary petition for relief is filed against such Person under any Applicable Bankruptcy Law and such involuntary petition is not dismissed within ninety (90) Days after the filing thereof or an order for relief naming such Person is entered under any Applicable Bankruptcy Law or any composition, rearrangement, extension, reorganization or other relief of debtors now or hereafter existing is requested or consented to by such Person.

With respect to any Event of Default, (i) the term “Defaulting Party” means the Party with respect to which such Event of Default has occurred; and (ii) the term “Non-Defaulting Party” means the Party that is not the Defaulting Party with respect to such Event of Default.

#### 14.2. Remedies Upon an Event of Default.

(a) If an Event of Default occurs during the Term, the Non-Defaulting Party may, for so long as the Event of Default is continuing (and so long as it is not the Defaulting Party with respect to any other Event of Default), (i) by written notice to the Defaulting Party establish a date (which date shall be between five and ten Business Days after the Non-Defaulting Party delivers notice) on which this Lease shall terminate (the “Early Termination Date”) and (ii) until the earlier of the Early Termination Date or the date on which such Event of Default has been cured, withhold any payments due and suspend performance of its other obligations in respect of this Lease.

(b) If an Early Termination Date has been designated and such Event of Default shall not have been cured and shall be continuing on the Early Termination Date, then this Lease shall terminate on the Early Termination Date.

(c) If this Lease is terminated on or as of the Early Termination Date and the Defaulting Party is PSE&G, then PSE&G shall perform the Restoration Obligations and Lessor shall be entitled to seek all available legal and equitable remedies.

(d) If this Lease is terminated on or as of the Early Termination Date and the Defaulting Party is Lessor, then PSE&G shall be entitled to seek all available legal and equitable remedies.

(e) If PSE&G is the Non-Defaulting Party, its damages shall include the income lost by PSE&G during the periods for which any portion of the Solar Facility is out of service, calculated using the tables set forth on Exhibit F hereto (“Lost Energy Damages”), based on a proportionate basis taking into account both the period of any outage and the percentage of the Solar Facility affected, including for any terminated portion of the Term.

## Article 15. CONDITIONS

15.1. **Conditions.** It is understood and agreed this Lease and the ability of PSE&G to use the Leased Premises for the Solar Facility is expressly contingent upon PSE&G's or its Contractor's obtaining and maintaining all Permits that may be required by any Governmental Entity including the New Jersey Board of Public Utilities and any local zoning authority, and a satisfactory environmental and engineering review of the Leased Premises by PSE&G, including performance of any soil, surface water or groundwater sampling or examination of any Closure and Post-Closure Improvements ("Engineering Review"). Lessor shall cooperate with PSE&G's effort to obtain and maintain such Permits and Engineering Review and shall take no action that could have a material adverse effect upon the status of the Leased Premises with respect to the Permitted Use or PSE&G's ability to obtain and maintain such Permits and Engineering Review. PSE&G shall have the right to terminate this Lease at any time and at no cost or expense if (a) any application for a Permit is finally rejected, (b) any Permit issued to PSE&G and/or Landfill Disruption Approval issued to Lessor contains an unreasonable term or condition or is canceled or modified in a manner that has an adverse impact on PSE&G, expires, lapses, or is otherwise withdrawn or terminated, (c) PSE&G reasonably determines that such Permit may not be obtained in a timely manner, (d) PSE&G reasonably determines within six (6) months of the Effective Date that any Engineering Review is unsatisfactory, (e) PSE&G reasonably determines that the Leased Premises are no longer technically compatible for its use, or (f) PSE&G determines that it will be unable to use the Leased Premises for the Permitted Use. PSE&G shall deliver a written notice of termination to Lessor and shall be effective upon the mailing of such notice by PSE&G, or upon such later date as designated by PSE&G in such notice. Upon such termination, this Lease shall be of no further force or effect and all rights, duties and obligations of Lessor and PSE&G under this Lease shall terminate, subject to Section 16.7. Notwithstanding anything to the contrary contained herein, this Lease and the obligations of the Parties hereunder are contingent upon the full execution and delivery by PSE&G and the Contractor of a contract for the installation of the Solar Facility.

## Article 16. GENERAL PROVISIONS

### 16.1. Assignment and Subletting.

(a) Neither Party shall assign, sublet, delegate or otherwise transfer (collectively, an "Assignment") this Lease or any of its rights or obligations hereunder without the prior written consent of the other Party, which consent shall not be unreasonably withheld or delayed. Notwithstanding the foregoing, (i) either Party may make an Assignment of this Lease to an Affiliate of such Party, (ii) the Lessor may assign its interest in this Lease to any Person succeeding to all or substantially all of its assets (including the Lessor Property) or to any Person acquiring all or substantially all of its undivided interest in the Lessor Property (including the Leased Premises), (iii) PSE&G may assign its interest in this Lease to any Person succeeding to or acquiring its interests in the Solar Facility; and (iv) either Party may make an Assignment of its interest in this Lease to a Financing Party. In the event of a sale or other transfer of the Lessor Property to any Person (other than a Financing Party), Lessor shall simultaneously make an Assignment of this Lease to

such Person pursuant to Section 16.1(a)(ii). Any assignee of all or any portion of a Party's interest hereunder (other than a Financing Party, but including any Person succeeding to such Party's interest hereunder as a result of foreclosure or other exercise of remedies by such Financing Party) shall assume and agree in writing to perform all of the obligations of its assignor accrued and unperformed as of the effective date of such Assignment and arising hereunder after the effective date of such Assignment. No Assignment of all or any portion of a Party's interest under this Lease shall relieve such Party from obligations or liability hereunder, except that if no Event of Default or event which, with the giving of notice or the lapse of time or both, would become such an Event of Default with respect to the assigning Party shall have occurred and be continuing, an Assignment pursuant to Section 16.1(a)(ii) or Section 16.1(a)(iii) shall relieve the assigning Party of any obligation or liability hereunder upon the effective date of the Assignment, without the need for consent from the other Party; provided in each case the assignee has assumed the obligations of the assigning Party as provided in the preceding sentence. Any Party making an Assignment pursuant to this Section 16.1 shall promptly notify the other Party thereof and furnish such Party a copy of such Assignment. Nothing contained herein shall prevent a Party from designating Representatives to act on its behalf hereunder, but a Party shall be fully responsible for the acts or omissions of its Representatives.

(b) This Lease shall inure to the benefit of and be binding upon the Parties and their respective successors and permitted assigns.

(c) Notwithstanding the foregoing provisions of this Section, neither party shall be permitted to assign or transfer its interest herein to any party that is, or of which any partners, officers, directors, members or shareholders are, (a) listed on the Specially Designated Nationals and Blocked Persons List maintained by the Office of Foreign Asset Control, Department of the Treasury, pursuant to Executive Order No. 13224, 66 Fed. Reg. 49079 (Sept. 25, 2001) and all applicable provisions of Title III of the USA PATRIOT Act, Public Law No. 107-56 (October 26, 2001); (b) listed on the Denied Persons List and Entity List maintained by the United States Department of Commerce; (c) listed on the List of Terrorists and List of Disbarred Parties maintained by the United States Department of State, (d) listed on any list or qualification of "Designated Nationals" as defined in the Cuban Assets Control Regulations 31 C.F.R. Part 515; or (e) listed on any other publicly available list of terrorists, terrorist organizations or narcotics traffickers maintained by any governmental authority. Any purported assignment of this Lease inconsistent with this Section shall be void ab initio.

16.2. **Notices and Consents.** All notices, requests, demands, claims, consents and other communications or deliveries hereunder shall be in writing and (a) delivered in person or by courier, (b) sent by a reputable overnight delivery service, or (c) mailed certified first class mail, postage prepaid, return receipt requested, to the appropriate party at the following addresses:

if to Lessor:

With copy to:

If to PSE&G: PSE&G  
80 Park Plaza, T-8  
Newark NJ 07102  
Attn: "Solar 4 All" Project Manager

with copy to: PSE&G  
80 Park Plaza, T-4  
Newark, NJ 07102  
Attention: Corporate Secretary

or such other address as a Party may designate to the other Party by notice given as provided herein. Such notices shall be effective (i) if delivered in person or by courier, upon actual receipt by the intended recipient, (ii) if sent by overnight delivery or mailed, upon the date of delivery or refusal thereof as shown by the confirmation statement or return receipt therefor.

**16.3. Integration; Amendment.** This Lease constitutes the entire agreement of the Parties relating to the subject matter hereof. There are no promises, terms, conditions, obligations, or warranties other than those contained herein. This Lease supersedes all prior communications, representations, or agreements, oral or written, among the Parties relating to the subject matter hereof. This Lease may not be amended except in writing signed by the Parties.

**16.4. Severability.** Any provision of this Lease which is prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions of this Lease, and any such prohibition or unenforceability in any jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

**16.5. Governing Law; Venue and Jurisdiction; Waiver of Jury Trial.**

(a) This Lease shall be subject to and governed by the Law of the State of New Jersey, without giving effect to principles of conflicts of Law.

(b) The federal district and state courts located in New Jersey shall have exclusive jurisdiction in any suit, action or other legal proceeding arising out of or relating to this Lease or the transactions contemplated hereby. Each Party hereby irrevocably and unconditionally (i) submits to the exclusive jurisdiction of such courts; and (ii) waives, to the fullest extent permitted by applicable Law, (A) any objection it may now or hereafter have to the laying of venue of any such suit, action or other legal proceeding in any such court, and (B) any objection that such courts are an inconvenient forum, and (iii) consents to service of process in any such suit, action or proceeding in any manner permitted by applicable Law.

(c) EACH PARTY HEREBY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY PROCEEDING ARISING OUT OF OR RELATING TO THIS LEASE OR THE TRANSACTIONS CONTEMPLATED HEREBY.

16.6. **Multiple Counterparts.** This Lease may be executed in two or more counterparts, each of which shall be deemed an original, and it will not be necessary in making proof of this Lease or the terms of this Lease to produce or account for more than one of such counterparts, provided the counterpart produced bears the signature of the Party sought to be bound.

16.7. **Effect of Termination.** If this Lease is terminated, this Lease shall become void and of no further force or effect (except for the provisions of Sections 3.3, 5.5 and 12.2, Article 13, Article 14 and Article 16, all of which shall survive such termination and continue in full force and effect); provided, however:

- (a) such termination shall not relieve any Party from any liability for breach of this Lease arising prior to such termination; and
- (b) if either Party owes any amount to the other Party at the time this Lease is so terminated (regardless of whether such first Party is in breach of this Lease), such first Party shall pay such amount to such second Party within five (5) Business Days of such termination.

16.8. **Memorandum of Lease.** The Parties agree to record with the appropriate land record offices a memorandum of lease substantially similar to Exhibit G containing a summary of the essential terms and conditions of this Surface Lease.

16.9. **Subordination.** Lessor represents and warrants the Lessor Property is not currently subject to any mortgage or ground lease. Lessor shall use its best efforts to obtain a subordination agreement with regard to any subsequent mortgage or ground lease in the form attached hereto as Exhibit H or otherwise in form and substance reasonably satisfactory to PSE&G ("Subordination Agreement") prior to placing any such new mortgage or ground lease on the Leased Premises; but, in any case, Lessor shall fully disclose the terms of this Lease to such prospective mortgagee or ground lessor and this Lease shall be and remain a superior encumbrance unless and until a Subordination Agreement is fully executed and delivered.

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Executed by the Parties as of the Effective Date.

[LESSOR]

By: \_\_\_\_\_

Name:

Title:

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

By: \_\_\_\_\_

Name:

Title:

**EXHIBIT A****LEASED PREMISES**

All of the real property in Block \_\_\_\_\_, Lot \_\_\_\_\_ in the municipality of \_\_\_\_\_ described within the boundaries designated "Leased Premises" on \_\_\_\_\_; initially being the area on which PSE&G intends to construct the Solar Facility, as same may be modified in accordance with the results of any Engineering Review or the requirements of Governmental Entities in connection with the issuance of any permits or approvals, and further as modified in accordance with a final as-built description of the Solar Facility.

In addition, the Leased Premises also include:

- A. Construction Lay-Down. An exclusive leasehold interest in the Lessor Property located \_\_\_\_\_ for use by PSE&G to temporarily stage, lay-down and store materials and equipment for the use of PSE&G, its employees, agents, contractors and their employees, including parking, in connection with the Work.
- B. Interconnection. An exclusive easement over the Lessor Property necessary to (a) install, maintain and operate an electrical conduit from the Solar Facility to the point of interconnection at \_\_\_\_\_, and (b) install a new switchgear/meter enclosure and related ancillary equipment.
- C. Access. A non-exclusive, general right of access over existing vehicular and pedestrian access roads and areas as are reasonably necessary and appropriate for use by PSE&G and its Representatives for vehicular and pedestrian ingress to and egress from the Leased Premises in connection with conducting the Work and any other use permitted under the Lease. PSE&G shall have such access at all times and Lessor shall provide such keys, combinations and other means of securing entry as are necessary.

**EXHIBIT B**

**Permitted Encumbrances**

**EXHIBIT C****RENT**

1. For the first year of commercial operation beginning with the COD, the rent payment shall be calculated as follows:
  - a. After the final NJBPU inspection of the as-built Solar Facility, the estimated annual energy production of the as-built Solar Facility (in AC kilowatt-hours) (the “Output”) shall be determined in accordance with a methodology consistent with NJBPU’s SREC certification review process (the version of PVWatts or other methodology then employed by NJBPU for calculating the performance of grid-connected photovoltaic systems); and
  - b. the Output shall be multiplied by [\$ \_\_\_\_\_] per kWh (the “Multiplier”).
2. The Multiplier shall be increased by two and one-half percent (2.5%) as of each anniversary of the COD during the Term.
3. PSE&G shall pay the rent amount due and owing on or before the tenth (10th) day of the month following the end of a quarterly billing period. If such amount remains unpaid for ten (10) days thereafter, PSE&G shall pay a late charge equal to five percent (5%) of the late payment. In addition, all amounts not paid within fifteen (15) days after notice of nonpayment by Lessor to PSE&G due shall bear interest at a rate the date same was originally due (without regard to any grace period) at a rate equal to the greater of: (a) five percent (5%) per annum or (b) two percent (2%) plus the then-current Wall Street Journal Prime Rate; but in neither of such events shall such interest exceed the maximum permitted by applicable law.

*[Table to be completed based on Output and lease payment rate]*

<u>Year</u>	<u>Estimated Output (kWh-AC)</u>	<u>Multiplier (\$)</u>	<u>Annual Rent (\$)</u>
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

NOTES:

1. Rental payments to be made quarterly in arrears, beginning with the first quarter following the start of commercial operations.
2. The Output shall not be adjusted during the Term. The Multiplier shall be escalated 2.5% annually.
3. FINAL SYSTEM PRODUCTION AND PAYMENT SCHEDULE TO BE CALCULATED AT PROJECT COMPLETION AND INSPECTION USING THE LOCATION OF NEWARK, NJ, AND BPU-APPROVED DERATE FACTOR.
4. No rental payments will be due and owing during the construction of the Solar Facility.

**Exhibit D****Insurance****I. Insurance Requirements for Lessor:**

1. For the Term of this Agreement, Lessor agrees to provide the following insurance coverages at its own expense that will cover any personal injuries or accidents that may occur as a direct result of the activities conducted by Lessor (including any activities of Lessor's employees, consultants, contractors or other agents) on the Lessor's premises:

a. Commercial General Liability insurance on an "occurrence" basis, including coverage for bodily injury and death, personal injury, property damage, contractual liability, and products and completed operations with limits as follows; \$1,000,000 each occurrence and \$2,000,000 in the annual aggregate.

b. Workers' Compensation and Employer's Liability insurance with limits as follows; workers' compensation – statutory, employer's liability - \$1,000,000 each accident and in the aggregate.

c. Commercial Automobile Liability Insurance, with limits of liability not less than \$1,000,000 combined single limit.

d. Umbrella/Excess Liability insurance of not less than \$1,000,000 per occurrence and \$1,000,000 annual aggregate. Such coverage shall be on a per occurrence basis and be over and above coverage provided by the policies described in clauses a, b and c above.

e. Pollution Legal Liability Insurance Policy ("PLL Policy") insuring Lessor and PSE&G against liabilities and obligations (i) arising pursuant to this Agreement, (ii) resulting from or in connection with a violation of Environmental Law or (iii) resulting from or in connection with the presence or release of Hazardous Materials on, at, under or emanating from the Leased Premises or Lessor Property. The PLL Policy shall have (x) limits of coverage (per claim and aggregate) of \$3,000,000, inclusive of defense costs, and (y) a self-insured retention reasonably acceptable to PSE&G.

f. Special form property insurance covering the repair and/or replacement cost of Lessor's property on the Lessor's premises as defined in this Lease. This insurance would exclude PSE&G property including the solar electric generating facility as defined in this Lease.

2. PSE&G shall be included as an additional insured under the coverage outlined in paragraphs 1. a, c, d, and e above.

3. Lessor shall provide a certificate of insurance executed by an authorized representative of Lessor's insurer as evidence of its compliance with the requirements of paragraphs 1 and 2 above. Lessor's insurer will provide PSE&G with thirty (30) days' prior

written notice of any cancellation of said insurance; and Lessor shall provide PSE&G with thirty (30) days' prior written notice of any reduction or material modification of said insurance.

4. All of the insurance provisions provided by Lessor above (a) shall be primary and not excess to any insurance or self-insurance carried by PSE&G, (b) contain standard cross-liability provisions, and (c) provide for a waiver of all rights of subrogation against PSE&G and its Contractor by Lessor and its insurers. All insurance companies shall be acceptable to PSE&G and have a rating of at least A-/VII in the most recent AM Best's Key Rating Insurance Guide. Lessor's provision of the insurance set forth above shall not relieve, diminish, limit or release Lessor from any of its obligations under the Lease.

## II. Insurance Requirements for PSE&G:

1. PSE&G shall maintain for the duration of this Lease the following insurance coverage, provided PSE&G has the right to self-insure any of the coverages set forth below or to provide such coverages through insurance provided by PSE&G's Contractor. If actual insurance policies are maintained in lieu of PSE&G's self-insurance, the Lessor shall be added as an additional insured under the coverages set forth in clauses (a) and (d) below.

a. Comprehensive General Liability Insurance including Completed Operations Coverage, covering bodily injury, personal injury and property damage. Limits of Liability shall not be less than \$1,000,000 Occurrence and \$2,000,000 policy aggregate. The General Liability Insurance must include coverage for XCU (Explosion, Collapse and Underground).

b. Workers' Compensation: statutory limits; Employers Liability Insurance: \$1,000,000 each accident and in the aggregate.

c. Commercial Automobile Liability Insurance, with limits of liability not less than \$1,000,000 Combined Single Limit.

d. Umbrella Liability Insurance with limits of liability not less than \$4,000,000.

e. Special form property Insurance covering repair and replacement of PSE&G's Improvements and other personal property at the Property.

2. Prior to commencing work at the site, PSE&G shall provide the Lessor with a Certificate of Insurance or Self-Insurance, signed by a person authorized by the insurer or PSE&G to bind coverage on its behalf. Such certificate shall be delivered to the Lessor before work commences at the Leased Premises.

3. Prior to the start of Work, PSE&G shall instruct its Contractor to procure and maintain in effect during performance of Contractor's Work under the following minimum insurance coverages with carriers acceptable to PSE&G including:

a. Workers' compensation insurance in accordance with statutory limits, as required by the state in which the Work is to be performed.

b. Commercial general liability insurance (occurrence form) providing coverage for premises, bodily injury, property damage, personal injury, advertising injury, if applicable, blanket contractual liability, products and completed operations for not less than three (3) years, coverage for independent contractors and broad form property damage coverage with limits of not less than \$1,000,000 for each occurrence with an annual aggregate of \$3,000,000 per project or per location.

c. Commercial automobile liability insurance providing coverage for all owned, non-owned, and hired automobiles used by the Contractor in the performance of its Work with a combined single limit of not less than \$1,000,000 for each occurrence of bodily injury and property damage.

d. Excess or umbrella liability insurance with a limit of not less than \$5,000,000 for each occurrence with an annual aggregate of \$5,000,000 per project or per location. This limit applies in excess of each of the coverages set forth in the above paragraphs, which are scheduled as primary.

**EXHIBIT E**  
**ENVIRONMENTAL REPORTS**

**EXHIBIT F****LOST ENERGY DAMAGES**

[SAMPLE ONLY: to be revised based on actual system size]

Year of Term	Daily Amount / Peak	Daily Amount / Non-Peak
Year 1	\$2,500	\$1,900
Year 2	\$2,400	\$1,900
Year 3	\$2,300	\$1,800
Year 4	\$2,300	\$1,800
Year 5	\$2,200	\$1,800
Year 6	\$2,200	\$1,700
Year 7	\$2,100	\$1,700
Year 8	\$2,100	\$1,600
Year 9	\$2,000	\$1,600
Year 10	\$2,000	\$1,600
Year 11	\$1,900	\$1,500
Year 12	\$1,900	\$1,500
Year 13	\$1,800	\$1,500
Year 14	\$1,800	\$1,400
Year 15	\$1,800	\$1,400
Year 16	\$520	\$410
Year 17	\$530	\$420
Year 18	\$540	\$420
Year 19	\$540	\$430
Year 20 +	\$550	\$430

NOTES:

Example calculation based on 1 MW (DC) Solar Facility

For purposes hereof:

Peak shall mean the months of April through and including September.

Non-Peak shall mean the months of October through and including March.

The amounts in the foregoing schedule represent the daily Lost Energy Damages applicable to the entire Solar Facility.

Example:

Lessor requires removal affecting 2% of the Solar Facility for 2 days in August of year 2

\$2,400 loss / day (peak) x 2% system affected = \$48/day

x 2 days = \$96 Lost Energy Damages owed PSE&amp;G from Lessor



**EXHIBIT G**

**MEMORANDUM OF LEASE AGREEMENT**

A written Surface Lease has been executed between the parties named in this Memorandum of Lease, and the following is given with respect to said Surface Lease:

NAME OF LESSOR:

ADDRESS OF LESSOR:

NAME OF LESSEE: Public Service Electric and Gas Company

ADDRESS OF LESSEE: 80 Park Plaza, Newark, NJ 07102

DATE OF SURFACE LEASE:

TERM OF SURFACE LEASE: Beginning on Effective Date and extending for a term of twenty (20) years from the date of Commercial Operation of the Solar Facility.

This Memorandum is intended for recording purposes only and does not modify, supersede, diminish, add to or change all or any of the provisions of the Surface Lease in any respect, and the provisions set forth in the Surface Lease shall prevail.

DESCRIPTION OF PROPERTY SET FORTH IN SAID LEASE AGREEMENT:

The Premises are described on "Exhibit A" attached hereto and made a part hereof.

IN WITNESS WHEREOF, Lessor and Lessee have caused this Memorandum of Lease Agreement to be signed as of the day and year first above written.

Public Service Electric and Gas Company

By: \_\_\_\_\_

Name:

Title:

[LESSOR]

By: \_\_\_\_\_

Name:

Title:

**EXHIBIT H**

**Form of Subordination Agreement**

Date: \_\_\_\_\_

Lender: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Lessor: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Lessee: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Property: \_\_\_\_\_

Mortgage: \_\_\_\_\_

Lease: \_\_\_\_\_

Premises: \_\_\_\_\_

In consideration of the mutual agreements made herein, Lender and Lessee agree:

1. Consent. Lender acknowledges receipt of a complete and accurate copy of the Lease and hereby consents to the Lease and all of the terms and provisions thereof.
2. Subordination. The Lease is subject and subordinate to the Mortgage and to all advances now or hereafter made thereunder or any modifications, amendments and extensions thereto, with the same force and effect as if the Mortgage had been executed, delivered, recorded, and all advances had been made thereunder, prior to execution and delivery of the Lease, and to all amendments, replacements, renewals, consolidations and extensions thereof, whether securing the same principal amount or otherwise.
3. Non-disturbance. Provided the Lease is in effect and Lessee is not then in default thereunder beyond applicable cure periods, then, in the event of foreclosure of the Mortgage or Lender's acceptance of a deed in lieu of foreclosure:
  - a. the Lease shall continue in full force and effect and Lessee's possession of the Premises shall not be disturbed by Lender;

b. Lender will not name Lessee as a party in any action or proceeding to foreclose the Mortgage or to exercise any of its other rights under the Mortgage or under law; and

c. any sale of the property pursuant to foreclosure or otherwise will be subject to all of Lessee's rights under the Lease.

4. Attornment. If Lender succeeds to the rights of Lessor under the Lease, whether by foreclosure, deed in lieu of foreclosure or otherwise, Lessee will attorn to Lender, and Lender will accept such attornment, for the unexpired term of the Lease, subject to all of the terms of the Lease; provided, however:

a. Lender shall not be bound by the payment to Lessor of rent farther in advance than as permitted or required under the Lease;

b. Lender shall not be liable for any act or omission of Lessor, or for any fact, circumstance or condition existing or arising prior to Lender's succession in interest to Lessor, except if Lender received notice of same pursuant hereto;

c. Lender shall not be subject to any offsets, claims or defenses Lessee might have against Lessor, except if Lender received notice of same pursuant hereto; and

d. if the Lease is not terminated following a casualty or condemnation, then upon the request of either Lessor or Lessee, Lender shall permit the use of any insurance proceeds or eminent domain awards for repair and restoration.

5. Notice and Cure. Notwithstanding any provision of the Lease to the contrary, Lessee agrees to deliver to Lender, in the manner set forth in Paragraph 10 hereof, a copy of any notice of default sent to Lessor by Lessee whenever Lessee shall give any such notice of default to Lessor; provided Lessee's failure to do so shall not affect the effectiveness of such notice as to Lessor. Lender shall have the right, but not the obligation, to cure such default within the time periods allowed Lessor under the Lease, provided such periods shall run from the date Lessor receives notice pursuant hereto.

6. Payment of Rent to Lender. If in the future there is a default by Lessor in the performance and observance of the terms of the Mortgage, Lender may, at its option, require all rents and all other payments due under the Lease be paid directly to Lender. Upon notification to that effect by Lender to Lessee, Lessor HEREBY IRREVOCABLY AUTHORIZES AND DIRECTS Lessee and Lessee agrees to pay any payments due under the terms of the Lease to Lender. Such payments shall constitute payments under the terms of the Lease and Lessor shall have no claim against Lessee by reason of such payments made to Lender, nor shall Lessee be obligated to inquire as to the existence of any default or the right of Lender to make such request.

7. Further Assurances. The subordination provision hereof is effective upon execution hereof and the non-disturbance and attornment provisions hereof shall operate immediately upon Lender's succeeding to the interest of Lessor in the Premises without execution of any further instrument. Lender and Lessee agree, however, to execute and deliver from time to time such

further documents as either party reasonably deems necessary or appropriate to evidence their agreement hereunder.

8. Lessee's Property. Lender hereby expressly waives any interest in the Solar Facility and any equipment, trade fixtures or other personal property now or hereafter located on or affixed to the Premises or any portion thereof regardless of the manner in which same is attached or affixed to the Premises, agrees the same does not constitute fixtures or realty and acknowledges Lessee is authorized to remove same.

9. Successors and Assigns. The term "Lender", as used herein, unless the context requires otherwise, shall include the successors and assigns of Lender and any persons or entity that shall become the owner of the Property by reason of a foreclosure of the Mortgage or an acceptance of a deed or an assignment in lieu of foreclosure or otherwise. The terms "Lessor" and "Lessee" as used herein shall include their respective successors and assigns.

10. Notices. All notices given hereunder shall be in writing and shall be deemed received at the earlier of when delivered (or delivery is refused) in hand or by overnight courier for which a receipt of delivery is given, by certified or registered mail, return receipt requested, addressed to Lessee and Lender at the addresses appearing on the first page hereof, or to such other address or addresses as the parties may from time to time specify by written notice so given.

11. Governing Law. This Lease shall be interpreted in accordance with and governed by the law of the State of New Jersey

12. Changes in Writing. This Lease may not be changed, waived, or terminated except in a writing signed by the party against whom enforcement of the change, waiver, or termination is sought.

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Executed under seal as of the date first above written.

LENDER:

By: \_\_\_\_\_

Name:

Title:

LESSOR:

By: \_\_\_\_\_

Name:

Title:

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

By: \_\_\_\_\_

Name:

Title:

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**  
**Solar 4 All Extension II Program Rules**

General Requirements

1. PSE&G will invest in, own, and operate solar systems on properties that are: (a) sanitary landfill facilities, or portions of sanitary landfill facilities, for which performance is complete with respect to all activities associated with the design, installation, purchase, or construction of all measures, structures, or equipment required by the Department of Environmental Protection; (b) any former or current commercial or industrial site that is currently vacant or underutilized and on which there has been, or there is suspected to have been, a discharge of contaminant (“brownfields”); and (c) areas containing large volumes of non-indigenous materials, where used to raise the topographic elevation of a site, which materials were contaminated prior to emplacement but not related to the operations at the location of emplacement, including, but not limited to: construction debris, dredge spoils, incinerator residue, demolition debris, fly ash, and non-hazardous solid waste (collectively “Non-Productive Sites”).
2. Upon completion, solar systems will be interconnected to the utility electrical distribution system.
3. The solar system must be capable of generating solar renewable energy certificates ("SRECs") as defined under NJBPU regulations.
4. PSE&G will be responsible for identifying and selecting suitable Non-Productive Sites for the solar systems.
5. PSE&G may retain the services of an engineering firm for Non-Productive Site assessment, development of the scope of work, permitting, proposal review, and other services. PSE&G intends to hire solar industry firms (“Developers”) through a competitive bid process to provide the engineering, permitting, procurement and construction services required to develop the projects. Alternatively, PSE&G may procure the equipment directly and hire Developers through a competitive bid process to provide the engineering, permitting, and construction services. PSE&G will perform the interconnection work for projects in PSE&G’s territory and may perform portions of the other work. Developers will prepare a proposal as defined by the competitive bid process. To the extent permitted by law, products manufactured in NJ may be given preference in the evaluation process.

6. For those projects that qualify as a “public work,” as defined by statute, the service provider will adhere to all aspects of the New Jersey State Prevailing Wage Act, N.J.S.A. 34:11-56.25 et seq., and will require the same of all subcontractors. For those projects that do not qualify as public works, service providers will be required to pay the equivalent of the prevailing wage for the county in which the work is to be performed, unless the work is performed by union employees, in which case the employees will be paid in accordance with the union contract.
7. PSE&G may initiate site selection, site evaluation, bid processes, and contract negotiations prior to Board approval.
8. PSE&G will obtain all required permits and provide overall project and construction management.
9. Quality assurance will be provided by PSE&G’s monitoring and supervision during construction and over the life of the Program.

Site Identification

10. PSE&G will identify potential Non-Productive Sites, which will be evaluated by a number of factors that may include permitting, interconnection, site conditions, and other factors as determined by PSE&G. PSE&G may retain real estate professionals to assist in identifying potential Non-Productive Sites. Outside Environmental and Engineering services may also be retained in evaluating Non-Productive Sites. Other outreach and marketing efforts may be employed to identify potential Non-Productive Sites.

PJM Interconnection Issues

11. The solar systems will be installed in various locations, will be grid-connected on the utility side of the billing meter to PSE&G’s electric distribution system, and will be eligible to generate SRECs.
12. The solar systems will be metered to determine the aggregate energy output and the number of SRECs generated. PSE&G will register the solar systems with the BPU and PJM Generation Attribute Tracking System (“GATS”).
13. PSE&G will initiate the PJM Interconnection process, and seek to identify the interconnection costs associated with viable sites as determined by PSE&G.

Contract between PSE&G and an Engineering, Procurement and Construction (“EPC”) contractor

14. Upon the award of a project, PSE&G will enter into a contract with an EPC contractor to build the solar system. The contract will contain typical terms and conditions including schedule and performance guaranties, liquidated damages, warranties, indemnifications, insurance, retainage or other credit enhancements, and a milestone payment schedule. The contract will be contingent on reaching agreement with the site owner.

Agreement with the Site Owner

15. PSE&G will make lease payments to the host sites. PSE&G and the site owner will enter into a suitable lease agreement (“Lease”) containing typical terms and conditions including rent payments, insurance, indemnifications, owner responsibility for pre-existing site conditions, and access, all to be negotiated with the site owner. Lease payments will commence upon the commercial operation of the solar system. The lease payment will be determined using a methodology similar to that used in the current Solar 4 All Extension Program, and will be executed for the term of the project unless applicable law requires a shorter term; the lease may contain options to extend the term as negotiated by the parties.
16. Additional payments may be made to site owners, which may also include pre and post commercial operation payments, and other option payments necessary to secure property rights for the site. The site owner must accept responsibility for pre-existing site conditions including, but not limited to, environmental and subsurface conditions. PSE&G will not be responsible for pre-existing site conditions.
17. Site owners with electric load will receive electric service with no change in the existing billing arrangement.

**ATTACHMENT B**

1                                   **PUBLIC SERVICE ELECTRIC AND GAS COMPANY**  
2   **DIRECT TESTIMONY**  
3   **OF**  
4   **STEPHEN SWETZ**  
5                   **SR. DIRECTOR – CORPORATE RATES AND REVENUE REQUIREMENTS**

6   **Q.     Please state your name and professional title.**

7   A.     My name is Stephen Swetz and I am the Sr. Director – Corporate Rates and Revenue  
8           Requirements, PSEG Services Corporation. My qualifications are included as  
9           Schedule SS-S4AEII-1.

10 **Q.    What is the purpose of your direct testimony in this proceeding?**

11 A.     The purpose of my testimony is to support Public Service Electric and Gas  
12         Company’s (“PSE&G” or the “Company”) proposed methodology for recovery of the  
13         costs related to a second extension of PSE&G’s Solar Generation Investment  
14         Program, called the Solar 4 All<sup>®</sup> Extension II Program (“Extension II Program” or the  
15         “Program”), including projected rate and bill impacts. My testimony provides details  
16         of the proposed calculations and recovery mechanism.

17                   **COST RECOVERY MECHANISM**

18 **Q.    Please briefly describe PSE&G’s proposed cost recovery program.**

19 A.     PSE&G is proposing to recover the revenue requirements associated with the direct  
20         costs of the Program in the same manner as in the prior Extension Program. Direct  
21         costs include all costs related to Program capital expenditures, allowance for funds  
22         used during construction (“AFUDC”), and operations and maintenance costs  
23         including the administrative costs of running the Program. These costs would be

1 offset by the benefits derived from the Program, including, but not limited to, the  
2 solar energy output sold into the PJM energy market and the net Solar Renewable  
3 Energy Certificates (“SREC”) revenue, as well as the amortization of the investment  
4 tax credit (“ITC”) utilized by the Company. If PJM capacity market rules change and  
5 solar capacity once again becomes a viable capacity resource, PSE&G will also offer  
6 capacity into the auctions and credit ratepayers with the revenue produced from  
7 participation. In addition, if the Company can derive any additional revenue in the  
8 future from the solar systems, all net proceeds will be credited to ratepayers as a  
9 reduction to revenue requirements. PSE&G is proposing that the Board authorize the  
10 recovery of the revenue requirements of the Program in accordance with N.J.S.A.  
11 48:3-98.1 et seq. The details of the costs proposed to be recovered, as well as the  
12 mechanism for such recovery, are described in the following sections of this  
13 testimony.

14 Calculation of the Revenue Requirements of Direct Costs

15 **Q. How does PSE&G propose to calculate the revenue requirements on a monthly**  
16 **basis?**

17 A. The Program investments are proposed to be treated as separate classes of utility  
18 plant, and depending on the type of investment, depreciated or amortized as described  
19 in the corresponding section below. The revenue requirements associated with the  
20 direct costs of the Program would be expressed as:

21 *Revenue Requirements = (Pre-Tax Cost of Capital \* Net Investment) +*  
22 *Amortization and/or Depreciation + Operation and Maintenance Costs –*

1 *Revenues from Solar Output – ITC Amortization w/ Tax Gross Up + Tax*

2 *Associated with ITC Basis Reduction*

3 **Q. Please describe the components and defined terms in PSE&G’s proposed**  
4 **monthly revenue requirement calculation.**

5 **A.** The following is a description of each term proposed in PSE&G’s revenue  
6 requirement calculation.

7 Cost of Capital – This is PSE&G’s requested overall weighted average cost of capital  
8 (“WACC”) for the Extension II Program. PSE&G shall earn a return on its net  
9 investment in the Extension II Program based upon an authorized return on equity  
10 (“ROE”) and capital structure including income tax effects. While the testimony of  
11 Company witness Paul Moul supports an ROE of 11.00%, PSE&G is requesting a  
12 return on equity of 9.75%, the same ROE recently authorized by the Board for the  
13 Gas System Modernization Program approved on November 16, 2015, to facilitate a  
14 prompt resolution of this filing. Therefore, the overall cost of capital proposed for the  
15 Program is 7.12% (10.57% on a pre-tax basis), based on a return on equity of 9.75%, an  
16 equity to capitalization ratio of 51.2%, and current tax rates. Any changes to current  
17 tax rates would be reflected in an adjustment to the Pre-Tax WACC. See Schedule SS-  
18 S4AEII-2 for the calculation of the current Pre-Tax WACC. In addition, any change in  
19 the WACC authorized by the Board in a subsequent base rate case will be reflected in  
20 the appropriate corresponding subsequent monthly revenue requirement calculations.  
21 Also, any change in the revenue requirement resulting from the change in the WACC  
22 will not be included in the monthly interest calculation for over and under recoveries

1 until the date of the next scheduled annual true-up but in any event, no later than January  
2 1 of the subsequent year.

3 Net Investment – This is the Gross Plant-in-Service less associated accumulated  
4 depreciation and/or amortization less Accumulated Deferred Income Tax (“ADIT”).  
5 ADIT will be computed at all times utilizing a normalization method of accounting as  
6 required by applicable IRS and Treasury Regulations. The assumptions supporting  
7 the capital expenditures related to the Program are found in the direct testimony and  
8 workpapers of Todd W. Hranicka.

9 Depreciation/Amortization – The depreciation or amortization of the Program assets  
10 will vary depending on asset class. Where applicable, the favorable impact of bonus  
11 depreciation is taken on the tax basis. The table below summarizes the proposed  
12 book recovery and associated base tax depreciation applied to the corresponding asset  
13 classes. The base tax depreciation is calculated on the total tax cost of the asset, less  
14 any bonus depreciation and 50% of the ITC.

<b>Asset Class</b>	<b>Book Recovery</b>	<b>Base Tax Depreciation</b>
Solar Panels, acquisition and installation costs	25 year dep.	5 year MACRS
Inverters	10 year dep.	
Communications Equipment		
Meters	25 year dep.	20 year MACRS

15 The amortization/depreciation would be based on a monthly vintaging methodology  
16 instead of the mass property accounting typically used for utility property. Please see

1 the testimony of Todd W. Hranicka for the support for the book recovery of each  
2 asset class.

3 Operations and Maintenance Costs – Operations and Maintenance Costs will include:

- 4 • PSE&G labor and other related on-going costs required to manage the  
5 physical assets.
- 6 • Administrative costs related to the management of the Program.
- 7 • Rent/lease payments or bill credits made to host sites/facilities.
- 8 • Insurance expense

9 The assumptions supporting the estimated operations and maintenance costs are  
10 described in the Direct Testimony and workpapers of Mr. Hranicka.

11 Revenues from Solar Output

12 PSE&G will pursue generating revenues from solar output from the following  
13 sources:

- 14 • Sales of energy in the applicable PJM wholesale markets
- 15 • As noted above, if solar once again becomes a viable capacity resource,  
16 capacity payments from the PJM capacity market
- 17 • Sales of SRECs through an auction process

18 PSE&G will apply all net revenues it receives from the energy and any  
19 capacity sales in the PJM markets and the sale of SRECs to customers to offset the  
20 Extension II Program revenue requirements. As described above, any net revenue  
21 received from any future source shall be credited to ratepayers as a reduction to  
22 revenue requirements. For the purpose of forecasting revenue requirements, the

1 SREC market price is calculated as a percentage of the Solar Alternative Compliance  
2 Payment (“SACP”) based on the current spread between the last three PSE&G SREC  
3 auctions (as of March 1, 2016) and the current energy year SACP. All revenue  
4 assumptions are provided in Mr. Hranicka’s workpaper (WP-TWH-S4AEII-1.xlsx).

5 Investment Tax Credit

6 As indicated in the Direct Testimony of Mr. Hranicka, utilities remain eligible  
7 for an enhanced Federal ITC for solar investments through 2021. For projects placed  
8 in service after 2016, the 30% ITC rate was scheduled to be reduced to  
9 10%. However, the recently enacted Protecting Americans from Tax Hikes Act of  
10 2015 (“Tax Act of 2015”) extended the 30% for all projects that commence  
11 construction by December 31, 2019. The rate is decreased to 26% for projects that  
12 have begun construction in 2020 and further decreases to 22% for all projects that  
13 commence construction in 2021, provided all projects are placed into service by  
14 2024. The ITC rate decreases to 10% for all projects that commence construction  
15 post 2021. The revenue requirement calculations assume the enhanced ITC will not  
16 be further extended. In addition, please note that the revenue requirements assume all  
17 projects commence construction and are placed into service in the same year. The  
18 ITC credit will be flowed back to ratepayers over the book life of the plant in  
19 accordance with Federal Income Tax law. Delaying the decrease of the ITC rate to  
20 10% for several years will result in the enhancement of the ITC benefit to ratepayers.

1           The ITC benefit is partially offset by the tax impact associated with the tax  
2 basis reduction equal to 50% of the ITC. This tax basis reduction is prescribed by  
3 Federal income tax law governing the ITC. The impact on revenue requirements is  
4 generated by applying the book depreciation method to the difference between the  
5 book basis and the tax basis multiplied by the tax rate, and then multiplied by the  
6 revenue conversion factor.

7 **Q. Is there a benefit to implementing the Extension II Program now?**

8 A. Yes. In addition to the extension of the enhanced ITC rate benefit, the 2015 Tax Act  
9 also extended bonus depreciation. Bonus depreciation had expired in 2014, but the  
10 2015 Tax Act allows for 50% bonus depreciation from 2015 through 2017, 40%  
11 bonus depreciation for 2018 and 30% bonus depreciation for 2019. Bonus  
12 depreciation is currently set to expire after 2019 and the Company is not forecasting  
13 another extension.

14           Bonus depreciation allows the Company to depreciate a significant amount of  
15 its investment in the first year for tax purposes. As a result, the ADIT balance  
16 dramatically increases, lowering Net Investment and thus reducing costs to  
17 ratepayers. Therefore, investment placed into service in 2019 will have a lower cost  
18 to ratepayers than investment placed into service thereafter when bonus depreciation  
19 is set to expire. Given the long lead times to complete landfill projects, this is the  
20 ideal time to implement a new program to take advantage of the significant savings  
21 from the enhanced ITC and bonus depreciation extension.

1 **Q. Are there any changes to the revenue requirement calculation in this Program**  
2 **versus the Solar 4 All Extension Program?**

3 A. Yes. In accordance with current IRS regulations, the accumulated deferred Federal  
4 income tax (ADFIT) balance used in the calculation of Net Investment must be  
5 compliant with the IRS Normalization Rules. This entails applying a proration  
6 methodology to the forecasted changes in the ADFIT balance.

7 **Q. Will the ADFIT proration methodology have a significant impact on revenue**  
8 **requirements?**

9 A. No. The impact will be a reduction to revenue requirements of approximately  
10 \$100,000 in aggregate over the life of the program.

11 **Q. When did the Company become aware that it needed to prorate its ADFIT**  
12 **balance?**

13 A. During 2015, the IRS issued several Private Letter Rulings (“PLRs”) that underscored  
14 that proration of ADFIT was required to be used where forecasted revenue  
15 requirements are used in setting rates. Without using the proration rules for ADFIT  
16 (and the true-up rules), the taxpayer(s) would be in violation of the normalization  
17 rules. Although PSEG will be seeking to obtain its own ruling, PSEG’s fact pattern  
18 appears to be very similar to the fact patterns of taxpayers that received those PLRs.

19 **Q. How does the proration methodology work?**

20 A. During the forecasted rate period, which is proposed to be October 1 through  
21 September 30 for the Program, the monthly Federal deferred income tax balance is

1 adjusted by a proration percentage. However, at the conclusion of each rate period  
2 the actual ADFIT balance is substituted for the prorated ADFIT balance.

3 **Q. How is the proration percentage calculated?**

4 A. The proration percentage is calculated as a fraction, the numerator of which is the  
5 remaining days in the forecasted portion of the rate period after the accrual of a  
6 change in the ADFIT balance and the denominator of which is the total number of  
7 days in the forecasted portion of the rate period.

8 For example, if the rate period is October 2016 through September 2017, the  
9 proration factor for changes in the ADFIT balance occurring in October 2016 is  
10 approximately 92%, calculated as the days between October 31, 2016 (the last day of  
11 the month) and September 30, 2017 (the end of the rate period), or 335 days, divided  
12 by the total days in the rate period (365).

13 **Q. How will a true-up work when actual results differ from forecast?**

14 A. The IRS regulations regarding true-ups require clarification. The Company is  
15 preparing a PLR request to, among other things, receive guidance regarding the  
16 calculation of the true-up. If the Company does not receive a response from the IRS  
17 by the time it makes its first true-up filing, it will use the information available at the  
18 time to make a calculation in accordance with the regulations in order to comply with  
19 the IRS Normalization rules. Barring any new information at the time the Company  
20 makes its first true-up filing, the Company intends to calculate the true-up by  
21 maintaining the prorated ADFIT calculation as forecasted, but calculating the actual

1 ADFIT for any variances during the rate period (i.e., if ADFIT was forecasted to be  
2 \$1,000 and the actual ADFIT was \$1,200, the Company will prorate the ADFIT  
3 associated with the original \$1,000 as forecasted and used for rate setting, but not  
4 prorate the \$200 ADFIT variance).

5 **Q. Does the Company have the option of not utilizing the ADFIT proration**  
6 **methodology?**

7 A. No. Failure to use the ADFIT proration methodology would violate the IRS's  
8 Normalization Rules, which would require the Company to cease claiming  
9 accelerated depreciation for the entire Company's New Jersey jurisdictional assets  
10 beginning with the date of the violation. As accelerated depreciation is a major  
11 customer benefit, it is in the Company's and ratepayers' best interest to fully comply  
12 with these rules.

13 **Q. Will the ADFIT proration methodology apply to the existing Solar 4 All**  
14 **programs?**

15 A. Yes. The proration methodology applies to all programs with a forecasted test year  
16 and depreciable assets, so it will apply to the Solar 4 All programs. The Company  
17 will reflect ADFIT proration in its next cost recovery filing scheduled to be filed by  
18 July 1, 2016.

19 **Q. Please describe the monthly detailed revenue requirement calculations.**

20 A. The monthly detailed calculations of the Revenue Requirements through September  
21 2017 and the annual revenue requirements through 2046 are shown in Schedules SS–  
22 S4AEII-3.

1 **Q. What are the revenue requirements for the initial rate recovery period?**

2 A. The expected revenue requirement for the Program is \$832,967 for the initial period,<sup>1</sup>  
3 as shown in Schedule SS-S4AEII-4. The peak revenue requirement in the first five  
4 subsequent annual periods is \$7,244,649 and occurs in the period October 2021  
5 through September 2022 based upon the Program assumptions.

6 Method for Recovery of Direct Costs

7 **Q. Please describe the cost recovery mechanism.**

8 A. Consistent with the cost recovery methodology for the Solar 4 All Extension  
9 Program, approved in Docket No. EO12080721 on May 31, 2013, PSE&G will  
10 recover the net revenue requirements associated with this Program via a new Solar  
11 Generation Investment Extension II Program Component (“SGIEIIPC”) of the  
12 electric Green Programs Recovery Charge (“GPRC”). The SGIEIIPC will be added  
13 to the electric GPRC in the Company’s electric tariff and be applicable to all electric  
14 rate schedules on an equal cents per kilowatt-hour basis.

15 **Q. When is the anticipated implementation of this charge?**

16 A. PSE&G is proposing to implement the SGIEIIPC of the electric GPRC  
17 simultaneously with Board approval of this Program based upon forecasted  
18 expenditures and usage. Since Board approval is anticipated by the end of September  
19 2016 for rates effective October 1, 2016, the initial period for determining rates will  
20 be from October 1, 2016 through September 30, 2017 to be in sync with the rate

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<sup>1</sup> See the following section “Method for Recovery of Direct Costs” for description of “initial period”

1 recovery period for all other GPRC components. If Board approval is received prior  
2 to October 1, 2016, rates will still go into effect as filed for the initial rate period. All  
3 Program costs incurred prior to October 1, 2016 will be deferred. If Board approval  
4 is received after October 1, 2016 but prior to September 30, 2017, the proposed initial  
5 rate period charge will still be implemented for the remaining months of the initial  
6 rate period. In that instance, all Program costs incurred prior to the rate-effective date  
7 will be deferred until rates go into effect.

8 **Q. How is recovery anticipated for the subsequent rate periods?**

9 A. For all subsequent rate periods, the tax normalization method of accounting as  
10 required by applicable IRS and Treasury Regulations will be included in the  
11 computation of the ADIT balance and this component will be included in PSE&G's  
12 annual GPRC Recovery filing that will be made no later than July of each year for the  
13 period of October 1 of the year through September 30 of the subsequent year plus the  
14 projected over/under deferred balance as of September 30 for the current year. The  
15 over/under deferred balance will include actual revenue requirements through March  
16 of the current year. The charges proposed in the annual filings made by July 1 of  
17 each year will go into effect provisionally or as final rates, on October 1 of the current  
18 year, upon issuance of a Board Order authorizing these provisional or final rates.

19 **Q. Please describe the calculation of the SGIEIIPC?**

20 A. The calculation of the proposed SGIEIIPC of the electric GPRC is shown in Schedule  
21 SS-S4AEII-5. The revenue requirements, for the initial and all subsequent rate

1 periods, are divided by the current forecasted kilowatt-hours sales to determine the  
2 SGIEIIPC of the electric GPRC without the New Jersey Sales and Use Tax (“SUT”)  
3 applied. The initial period and all subsequent revenue recovery periods are scheduled  
4 as October of the current year through September of the following year to be  
5 consistent with the other GPRC components. The same level of sales used in the  
6 initial period is held constant for the applicable months in all subsequent recovery  
7 periods for illustrative purposes only (See Schedule SS-S4AEII-5). The proposed  
8 SGIEIIPC of the electric GPRC for each period is then applied to all the existing class  
9 average rates and the percentage change is calculated. In addition, the annual bill  
10 impacts for the typical RS customer are calculated for each period through 2047. The  
11 expected increase from the electric SGIEIIPC for the initial recovery period for a  
12 residential customer would be \$.000020 per kWh without SUT (\$.000021 per kWh  
13 including SUT) with an expected maximum increase to the RS typical annual bill  
14 occurring in the period October 1, 2021 through September 30, 2022 with a rate of  
15 \$0.000176 per kWh without SUT (\$0.000188 per kWh including SUT).

16 PSE&G’s typical residential customer using 750 kWh in a summer month and  
17 7,200 kWh annually would experience an initial increase in their annual bill from  
18 \$1,243.92 to \$1,244.08 or \$0.16, or approximately 0.01%, or an average of about  
19 \$0.01 per month (based upon Delivery Rates and BGS-RSCP charges in effect May  
20 7, 2016 assuming that the customer receives BGS-RSCP service from PSE&G), with  
21 the expected maximum increase in the period from October 1, 2021 through

1 September 30, 2022 of approximately \$1.36 (0.11%), or about \$0.11 per month from  
2 rates in effect May 7, 2016.

3 **Q. What is the rate impact of this program when included with the Solar Pilot**  
4 **Recovery Charge (“SPRC”) and other GPRC Programs?**

5 A. The cumulative rate impacts of this Program along with the Company’s SPRC  
6 Program and its other approved GPRC Programs through September 2021 can be  
7 found on Schedule SS-S4AEII-6. The supporting detailed calculations can be found  
8 in the electronic workpaper WP-SS-S4AEII-1.xlsx. The electronic version of this  
9 filing contains the supporting detailed assumptions and calculations for Schedules SS-  
10 S4AEII-2 through SS-S4AEII-8 in electronic workpapers labeled WP-SS-S4AEII-  
11 1.xlsx, and WP-SS-S4AEII-2.xlsx.

12 **Q. Based on the Company’s proposal, please describe how any monthly under or**  
13 **over recovery will be treated.**

14 A. Under the Company’s proposal, any over/under recovery of the actual revenue  
15 requirements compared to revenues would be deferred. In calculating the monthly  
16 interest on net over and under recoveries, the interest rate shall be based upon the  
17 Company’s interest rate obtained on its commercial paper and/or bank credit lines  
18 utilized in the preceding month. If both commercial paper and bank credit lines have  
19 been utilized, the weighted average of both sources of capital shall be used. In the  
20 event that neither commercial paper nor bank credit lines were utilized in the  
21 preceding month, the last calculated rate will be used. The interest rate shall not  
22 exceed PSE&G’s overall rate of return as authorized by the Board as utilized in

1 calculating revenue requirements for the corresponding period. The calculation of  
2 monthly interest shall be based on the net of tax average monthly balance, consistent  
3 with the methodology set forth in Schedules SS-S4AEII-7. Simple interest shall  
4 accrue on any under and over recovered balances, and shall be included in the  
5 deferred balances at the end of each reconciliation period. Near the end of the initial  
6 and each subsequent recovery period, the corresponding deferred balances would be  
7 included with forecasted revenue requirements for the succeeding period for purpose  
8 of setting the revised SGIEIIPC.

9 **Q. Are there any additional items included with this filing?**

10 A. Yes, the Board's Order pursuant to N.J.S.A. 48:3-98.1, Appendix A, Section I(a),  
11 BPU Docket No. EO08030164, requires that this filing include three years of a pro-  
12 forma Income Statement and Balance Sheet showing the incremental impacts from  
13 the Program. The Company has prepared the projected Income Statement and  
14 Balance Sheet for the Solar 4 All Extension II Program from 2016 to 2047. See  
15 Schedule SS-S4AEII-8. The supporting detailed calculations can be found in the  
16 electronic work papers WP-SS-S4AEII-1.xlsx.

17 **Q. Does this conclude your testimony?**

18 A. Yes, it does.

**Schedule Index**

Sched SS-S4AEII – 1 .....Qualifications of Stephen Swetz

Sched SS-S4AEII – 2 .....Weighted Average Cost of Capital (WACC)

Sched SS-S4AEII – 2a .....Weighted Average Cost of Capital from 2009 Rate Case (WACC)

Sched SS-S4AEII – 3 .....Total Program Revenue Requirements Summary

Sched SS-S4AEII – 4 .....Solar 4 All Extension II Program – Proposed Rate Calculation

Sched SS-S4AEII – 5 .....Solar 4 All Extension II Program - Rate Impact Analysis

Sched SS-S4AEII – 6 .....Cumulative Rate Impact Analysis - Solar Program Recovery Charge (SPRC) & Electric Green Programs Recovery Charge (GPRC)

Sched SS-S4AEII – 7 .....Over / Under Balance Calculation

Sched SS-S4AEII – 8 .....Solar 4 All Extension II Program Income Statement and Balance Sheet

**Electronic Work Paper Index**

WP-SS-S4AEII-1.xlsx .....Revenue Requirements Summary and Rate Analysis Calculations

WP-SS-S4AEII-2.xlsx .....Detailed Revenue Requirements Calculations – Landfills/Brownfields Segment



1 other filings including unbundling electric rates and Off-Tariff Rate Agreements. I have  
2 had a leadership role in various economic analyses, asset valuations, rate design, pricing  
3 efforts and cost of service studies.

4 I am an active member of the American Gas Association's Rate and  
5 Strategic Issues Committee, the Edison Electric Institute's Rates and Regulatory Affairs  
6 Committee and the New Jersey Utility Association (NJUA) Finance and Regulatory  
7 Committee.

8 **EDUCATIONAL BACKGROUND**

9 I hold a B.S. in Mechanical Engineering from Worcester Polytechnic  
10 Institute and an MBA from Fairleigh Dickinson University.

**LIST OF PRIOR TESTIMONIES**

<b>Company</b>	<b>Utility</b>	<b>Docket</b>	<b>Testimony</b>	<b>Date</b>	<b>Case / Topic</b>
Public Service Electric & Gas Company	E/G	GR15111294	written	Nov-16	Remediation Adjustment Charge-RAC 23
Public Service Electric & Gas Company	E	ER15101180	written	Sep-15	Energy Strong / Revenue Requirements & Rate Design - Third Roll-in
Public Service Electric & Gas Company	E/G	ER15070757/GR15070758	written	Jul-15	Green Programs Recovery Charge (GPRC)-Including CA, DR, EEE, EEE Ext, S4All, S4AEXT, SLII, SLIII / Cost Recovery
Public Service Electric & Gas Company	E	ER15060754	written	Jul-15	Solar Pilot Recovery Charge (SPRC-Solar Loan I) / Cost Recovery
Public Service Electric & Gas Company	G	GR15060748	written	Jul-15	Weather Normalization Charge / Cost Recovery
Public Service Electric & Gas Company	G	GR15060646	written	Jun-15	Margin Adjustment Charge (MAC) / Cost Recovery
Public Service Electric & Gas Company	E/G	ER15050558	written	May-15	Societal Benefits Charge (SBC) / Cost Recovery
Public Service Electric & Gas Company	E	ER15050558	written	May-15	Non-Utility Generation Charge (NGC) / Cost Recovery
Public Service Electric & Gas Company	E/G	ER15030389/GR15030390	written	Mar-15	Energy Strong / Revenue Requirements & Rate Design - Second Roll-in
Public Service Electric & Gas Company	G	GR15030272	written	Feb-15	Gas System Modernization Program (GSMP)
Public Service Electric & Gas Company	E/G	GR14121411	written	Dec-14	Remediation Adjustment Charge-RAC 22
Public Service Electric & Gas Company	E/G	ER14091074	written	Sep-14	Energy Strong / Revenue Requirements & Rate Design - First Roll-in
Public Service Electric & Gas Company	E/G	EO14080897	written	Aug-14	EEE Ext II
Public Service Electric & Gas Company	G	ER14070656	written	Jul-14	Weather Normalization Charge / Cost Recovery
Public Service Electric & Gas Company	E/G	ER14070651/GR14070652	written	Jul-14	Green Programs Recovery Charge (GPRC)-Including CA, DR, EEE, EEE Ext, S4All, S4AEXT, SLII, SLIII / Cost Recovery
Public Service Electric & Gas Company	E	ER14070650	written	Jul-14	Solar Pilot Recovery Charge (SPRC-Solar Loan I) / Cost Recovery
Public Service Electric & Gas Company	G	GR14050511	written	May-14	Margin Adjustment Charge (MAC) / Cost Recovery
Public Service Electric & Gas Company	E/G	GR14040375	written	Apr-14	Remediation Adjustment Charge-RAC 21
Public Service Electric & Gas Company	E/G	ER13070603/GR13070604	written	Jun-13	Green Programs Recovery Charge (GPRC)-Including DR, EEE, EEE Ext, CA, S4All, SLII / Cost Recovery
Public Service Electric & Gas Company	G	GR13070615	written	Jun-13	Weather Normalization Charge / Cost Recovery
Public Service Electric & Gas Company	G	GR13060445	written	May-13	Margin Adjustment Charge (MAC) / Cost Recovery
Public Service Electric & Gas Company	E/G	EO13020155/GO13020156	written/oral	Mar-13	Energy Strong / Revenue Requirements & Rate Design - Program Approval
Public Service Electric & Gas Company	G	GO12030188	written/oral	Mar-13	Appliance Service / Tariff Support
Public Service Electric & Gas Company	E	ER12070599	written	Jul-12	Solar Pilot Recovery Charge (SPRC-Solar Loan I) / Cost Recovery
Public Service Electric & Gas Company	E/G	ER12070606/GR12070605	written	Jul-12	RGGI Recovery Charges (RRC)-Including DR, EEE, EEE Ext, CA, S4All, SLII / Cost Recovery
Public Service Electric & Gas Company	E	EO12080721	written/oral	Jul-12	Solar Loan III (SLIII) / Revenue Requirements & Rate Design - Program Approval
Public Service Electric & Gas Company	E	EO12080721	written/oral	Jul-12	Solar 4 All Extension(S4AllExt) / Revenue Requirements & Rate Design - Program Approval
Public Service Electric & Gas Company	G	GR12060489	written	Jun-12	Margin Adjustment Charge (MAC) / Cost Recovery
Public Service Electric & Gas Company	G	GR12060583	written	Jun-12	Weather Normalization Charge / Cost Recovery
Public Service Electric & Gas Company	E/G	ER12030207	written	Mar-12	Societal Benefits Charge (SBC) / Cost Recovery
Public Service Electric & Gas Company	E	ER12030207	written	Mar-12	Non-Utility Generation Charge (NGC) / Cost Recovery
Public Service Electric & Gas Company	G	GR11060338	written	Jun-11	Margin Adjustment Charge (MAC) / Revenue Requirements & Rate Design - Program Approval
Public Service Electric & Gas Company	G	GR11060395	written	Jun-11	Weather Normalization Charge / Revenue Requirements & Rate Design - Program Approval
Public Service Electric & Gas Company	E	EO11010030	written	Jan-11	Economic Energy Efficiency Extension (EEEExt) / Revenue Requirements & Rate Design - Program Approval
Public Service Electric & Gas Company	E/G	ER10100737	written	Oct-10	RGGI Recovery Charges (RRC)-Including DR, EEE, CA, S4All, SLII / Cost Recovery
Public Service Electric & Gas Company	E/G	ER10080550	written	Aug-10	Societal Benefits Charge (SBC) / Cost Recovery
Public Service Electric & Gas Company	E	ER10080550	written	Aug-10	Non-Utility Generation Charge (NGC) / Cost Recovery
Public Service Electric & Gas Company	E/G	GR09050422	written/oral	Mar-10	Base Rate Proceeding / Cost of Service & Rate Design
Public Service Electric & Gas Company	E	ER10030220	written	Mar-10	Solar Pilot Recovery Charge (SPRC-Solar Loan I) / Cost Recovery
Public Service Electric & Gas Company	E	EO09030249	written	Mar-09	Solar Loan II(SLII) / Revenue Requirements & Rate Design - Program Approval
Public Service Electric & Gas Company	E/G	EO09010056	written	Feb-09	Economic Energy Efficiency(EEE) / Revenue Requirements & Rate Design - Program Approval
Public Service Electric & Gas Company	E	EO09020125	written	Feb-09	Solar 4 All (S4All) / Revenue Requirements & Rate Design - Program Approval
Public Service Electric & Gas Company	E	EO08080544	written	Aug-08	Demand Response (DR) / Revenue Requirements & Rate Design - Program Approval
Public Service Electric & Gas Company	E/G	ER10100737	written	Jun-08	Carbon Abatement (CA) / Revenue Requirements & Rate Design - Program Approval

**PSE&G Solar 4 All Extension II**  
**Weighted Average Cost of Capital (WACC)**

	<u>Percent</u>	<u>Cost</u>	<u>Weighted Cost</u>	<u>Revenue Conversion Factor</u>	<u>Pre-Tax Weighted Cost</u>	<u>Discount Rate</u>
Other Capital	48.8000%	4.36%	2.1277%	1.0000	2.1277%	
Customer Deposits	0.0000%	0.00%	0.0000%	1.0000	0.0000%	
Sub-total	48.8000%		2.1277%		2.1277%	1.2585%
Preferred Stock	0.0000%	0.00%	0.0000%	1.6906	0.0000%	0.0000%
Common Equity	51.2000%	9.75%	4.9920%	1.6906	8.4396%	4.9920%
Total	100.0000%		7.1197%		10.5672%	6.2505%
Monthly WACC			0.59331%		0.8806%	

Reflects a tax rate of 40.850%

**PSE&G Solar 4 All Extension II  
2009 Rate Case Weighted Average Cost of Capital (WACC)**

	<u>Percent</u>	<u>Cost</u>	<u>Weighted Cost</u>	<u>Revenue Conversion Factor</u>	<u>Pre-Tax Weighted Cost</u>	<u>Discount Rate</u>
Other Debt	48.8000%	6.0173%	2.9364%	1.0000	2.9364%	
Common Equity	51.2000%	10.30%	5.2736%	1.6906	8.9156%	5.2736%
Total	100.0000%		8.2100%		11.8521%	5.2736%
Monthly WACC			0.68417%		0.9877%	

Reflects a tax rate of 40.850%

**PSE&G Solar 4 All Extension II  
Revenue Requirements Calculation**

(\$000's)

**Solar 4 All Extension II : Total Program**

	(1)	(2)	(3)	(4)	(5)	(7)			(9)	(10)	(11)	(12)
						Plant						
	Program Investment	Gross Plant	Depreciation Expense	Accumulated Depreciation	Net Plant	Tax Depreciation	Book Deprec Tax Basis	Prorated Deferred Tax Exp	Beginning Accumulated Deferred Income Tax	Ending Accumulated Deferred Income Tax	Average Net Investment	Return Requirement
Feb-16	-	-	-	-	-	-	-	-	-	-	-	-
Mar-16	-	-	-	-	-	-	-	-	-	-	-	-
Apr-16	-	-	-	-	-	-	-	-	-	-	-	-
May-16	-	-	-	-	-	-	-	-	-	-	-	-
Jun-16	-	-	-	-	-	-	-	-	-	-	-	-
Jul-16	-	-	-	-	-	-	-	-	-	-	-	-
Aug-16	-	-	-	-	-	-	-	-	-	-	-	-
Sep-16	-	-	-	-	-	-	-	-	-	-	-	-
Oct-16	241	-	-	-	-	-	-	-	-	-	-	-
Nov-16	551	-	-	-	-	-	-	-	-	-	-	-
Dec-16	396	-	-	-	-	-	-	-	-	-	-	-
Jan-17	1,284	-	-	-	-	-	-	-	-	-	-	-
Feb-17	3,674	-	-	-	-	-	-	-	-	-	-	-
Mar-17	2,789	-	-	-	-	-	-	-	-	-	-	-
Apr-17	445	-	-	-	-	-	-	-	-	-	-	-
May-17	879	-	-	-	-	-	-	-	-	-	-	-
Jun-17	3,068	-	-	-	-	-	-	-	-	-	-	-
Jul-17	2,961	-	-	-	-	-	-	-	-	-	-	-
Aug-17	6,338	-	-	-	-	-	-	-	-	-	-	-
Sep-17	5,250	-	-	-	-	-	-	-	-	-	-	-
	Program Assumption	Program Assumption	Refer to each Segment "Bk Depr" Worksheets	Prior Month + Col 3	Col 2 - Col 4	Refer to each Segment "Tax Depr" Worksheets	Refer to each Segment "Tax Depr" Worksheets	(Col 6 - Col 7) * [Income Tax Rate]	Prior + Col 8	Col 5 - Col 9	(Prior Col 6 + Col 6) / 2 * Monthly Pre Tax WACC	
2016	1,189	-	-	-	-	-	-	-	-	-	-	-
2017	36,568	-	-	-	-	-	-	-	-	-	-	-
2018	72,190	73,161	1,315	1,315	71,846	29,299	1,118	8,055	8,052	10,232	62,837	2,925
2019	68,166	145,093	4,812	6,126	138,966	37,379	4,090	8,706	22,371	24,150	115,971	9,740
2020	64,143	216,755	7,967	14,093	202,662	34,087	6,804	7,965	34,527	35,722	167,934	15,189
2021	33,463	288,155	10,800	24,893	263,262	45,110	9,294	9,531	48,538	50,140	214,450	19,683
2022	-	288,155	12,654	37,547	250,608	41,418	10,944	7,423	62,106	62,949	188,608	21,329
2023	-	288,155	12,654	50,200	237,954	26,557	10,944	3,845	69,085	69,519	169,179	18,892
2024	-	288,155	12,654	62,854	225,301	16,964	10,944	1,470	71,929	72,096	153,815	17,026
2025	-	288,155	12,654	75,508	212,647	10,911	10,944	(5)	72,160	72,159	141,014	15,519
2026	-	288,155	12,654	88,162	199,993	3,851	10,944	(1,678)	69,549	69,355	131,068	14,293
2027	2,250	290,405	12,751	100,912	189,492	712	11,036	(2,432)	65,423	65,170	124,552	13,410
2028	4,725	295,130	12,943	113,855	181,275	1,858	11,238	(2,196)	61,534	61,320	120,227	12,885
2029	4,500	299,630	12,899	126,754	172,875	2,977	11,248	(1,940)	58,115	57,928	115,231	12,405
2030	4,275	303,905	12,856	139,611	164,294	3,563	11,250	(1,801)	54,949	54,780	109,783	11,844
2031	2,250	306,155	12,764	152,375	153,780	3,586	11,192	(1,789)	51,873	51,679	102,528	11,167
2032	-	306,155	12,575	164,949	141,206	2,872	11,029	(1,929)	48,585	48,362	93,256	10,260
2033	-	306,155	12,575	177,524	128,631	1,904	11,029	(2,159)	44,897	44,647	84,383	9,298
2034	-	306,155	12,575	190,098	116,057	1,235	11,029	(2,318)	40,924	40,656	75,791	8,373
2035	-	306,155	12,575	202,673	103,482	755	11,029	(2,432)	36,747	36,465	67,400	7,475
2036	-	306,155	12,575	215,247	90,908	398	11,029	(2,514)	32,419	32,127	59,158	6,595
2037	-	306,155	12,477	227,725	78,430	275	10,936	(2,522)	28,061	27,771	51,029	5,729
2038	-	306,155	12,095	239,820	66,335	249	10,573	(2,442)	23,826	23,549	43,143	4,884
2039	-	306,155	11,623	251,443	54,712	194	10,125	(2,351)	19,754	19,486	35,569	4,070
2040	-	306,155	11,196	262,639	43,516	124	9,719	(2,270)	15,821	15,563	28,283	3,288
2041	-	306,155	10,865	273,504	32,650	42	9,405	(2,217)	11,990	11,736	21,237	2,535
2042	-	306,155	10,775	284,279	21,876	-	9,319	(2,207)	8,185	7,930	14,268	1,796
2043	-	306,155	9,650	293,929	12,226	-	8,363	(1,957)	4,676	4,484	7,981	1,084
2044	-	306,155	6,669	300,597	5,557	-	5,828	(1,371)	2,202	2,073	3,643	544
2045	0	306,155	3,983	304,581	1,574	-	3,519	(825)	670	604	1,048	197
2046	-	306,155	1,574	306,155	(0)	-	1,401	(307)	-	-	(0)	25
2047	-	306,155	-	306,155	(0)	-	-	-	0	0	0	(0)
Total	293,719		306,155			266,321	266,321	4,731				262,459
Oct16- Sep17	27,877		-			-	-	-				-



# PSE&G Solar 4 All Extension II Proposed Rate Calculations

Schedule SS-S4AEII-4

(\$'s Unless Specified)

SUT Rate 7%

<u>Line</u>	<u>Date(s)</u>		<u>Electric</u>	<u>Source/Description</u>
1	Oct16- Sep17	Revenue Requirements	832,967	SS-3, Col 25
2	Sep-16	(Over) / Under Recovered Balance	0	SS-7, Line 4, Col 1
3	Sep-16	Cumulative Interest Exp / (Credit)	0	SS-7, Line 7, Col 1
4		Total Target Rate Revenue	832,967	Line 1 + Line 2 + Line 3
5	Oct16- Sep17	Forecasted kWh (000)	41,104,726	
6		Calculated Rate w/o SUT (\$/kWh)	0.000020	(Line 4 / (Line 5*1,000)) [Rnd 6]
7		Public Notice Rate w/o SUT (\$/kWh)	0.000020	Line 6
8		Existing Rate w/o SUT (\$/kWh)	0.000000	
9		Proposed Rate w/o SUT (\$/kWh)	0.000020	Line 7
10		Proposed Rate w/ SUT (\$/kWh)	0.000021	(Line 9 * (1 + SUT Rate)) [Rnd6]
11		Difference in Proposed and Previous Rate	0.000020	(Line 9 - Line 8)
12		Resultant S4AEII Revenue Increase / (Decrease)	822,095	(Line 5 * Line 11 * 1,000)

**PSE&G Solar 4 All Extension II  
Solar 4 All Extension II - Rate Impact Analysis**

Schedule SS-S4AEII-5

7.200 Avg RS kWh / yr.  
750 Avg RS kWh / Summer Month  
525 Avg RS kWh / Winter Month

7% SUT Rate

41,104,726 kWh Sales (000) - Annual (Oct16/Sep17)

0.001484 Current electric GPRC (\$/kWh)

(1)	(2)	(3)	(4)-(10) Class Average Rate w/SUT - \$/kWh <sup>1</sup>							(11)-(13) Typical RS GPRC (\$)			(14)	(15)	(16)	
SGIEIIP Revenue Requirements	SGIEIIP w/o SUT (\$/kWh)	SGIEIIP w/ SUT (\$/kWh)	RS	RHS	RLM	GLP	LPL-S	LPL-P	HTS-S	Summer Monthly Bill	Winter Monthly Bill	Annual Bill	Change in RS Typical Annual Bill (\$\$)	RS Typical Annual Bill (\$\$)	% Change in RS Typical Annual Bill	
Current			0.172722	0.136450	0.162823	0.163931	0.136435	0.104447	0.097142	1.11	0.78	10.68		1,243.60		
Oct16-Sep17	832,967	0.000020	0.000021	0.172743	0.136471	0.162844	0.163952	0.136456	0.104468	0.097163	1.13	0.79	10.84	0.16	1,243.76	0.013%
Oct17-Sep18	1,836,669	0.000045	0.000048	0.172770	0.136498	0.162871	0.163979	0.136483	0.104495	0.097190	1.15	0.80	11.00	0.32	1,243.92	0.026%
Oct18-Sep19	4,950,398	0.000120	0.000128	0.172850	0.136578	0.162951	0.164059	0.136563	0.104575	0.097270	1.21	0.85	11.64	0.96	1,244.56	0.077%
Oct19-Sep20	5,861,503	0.000143	0.000153	0.172875	0.136603	0.162976	0.164084	0.136588	0.104600	0.097295	1.23	0.86	11.80	1.12	1,244.72	0.090%
Oct20-Sep21	6,685,855	0.000163	0.000174	0.172896	0.136624	0.162997	0.164105	0.136609	0.104621	0.097316	1.24	0.87	11.92	1.24	1,244.84	0.100%
Oct21-Sep22	7,244,649	0.000176	0.000188	0.172910	0.136638	0.163011	0.164119	0.136623	0.104635	0.097330	1.25	0.88	12.04	1.36	1,244.96	0.109%
Oct22-Sep23	4,473,410	0.000109	0.000117	0.172839	0.136567	0.162940	0.164048	0.136552	0.104564	0.097259	1.20	0.84	11.52	0.84	1,244.44	0.068%
Oct23-Sep24	2,911,756	0.000071	0.000076	0.172798	0.136526	0.162899	0.164007	0.136511	0.104523	0.097218	1.17	0.82	11.24	0.56	1,244.16	0.045%
Oct24-Sep25	1,858,585	0.000045	0.000048	0.172770	0.136498	0.162871	0.163979	0.136483	0.104495	0.097190	1.15	0.80	11.00	0.32	1,243.92	0.026%
Oct25-Sep26	1,066,681	0.000026	0.000028	0.172750	0.136478	0.162851	0.163959	0.136463	0.104475	0.097170	1.13	0.79	10.84	0.16	1,243.76	0.013%
Oct26-Sep27	549,650	0.000013	0.000014	0.172736	0.136464	0.162837	0.163945	0.136449	0.104461	0.097156	1.12	0.79	10.80	0.12	1,243.72	0.010%
Oct27-Sep28	996,649	0.000024	0.000026	0.172748	0.136476	0.162849	0.163957	0.136461	0.104473	0.097168	1.13	0.79	10.84	0.16	1,243.76	0.013%
Oct28-Sep29	1,265,207	0.000031	0.000033	0.172755	0.136483	0.162856	0.163964	0.136468	0.104480	0.097175	1.14	0.80	10.96	0.28	1,243.88	0.023%
Oct29-Sep30	1,344,732	0.000033	0.000035	0.172757	0.136485	0.162858	0.163966	0.136470	0.104482	0.097177	1.14	0.80	10.96	0.28	1,243.88	0.023%
Oct30-Sep31	1,222,141	0.000030	0.000032	0.172754	0.136482	0.162855	0.163963	0.136467	0.104479	0.097174	1.14	0.80	10.96	0.28	1,243.88	0.023%
Oct31-Sep32	634,361	0.000015	0.000016	0.172738	0.136466	0.162839	0.163947	0.136451	0.104463	0.097158	1.13	0.79	10.84	0.16	1,243.76	0.013%
Oct32-Sep33	427,892	0.000010	0.000011	0.172733	0.136461	0.162834	0.163942	0.136446	0.104458	0.097153	1.12	0.78	10.72	0.04	1,243.64	0.003%
Oct33-Sep34	3,505,024	0.000085	0.000091	0.172813	0.136541	0.162914	0.164022	0.136526	0.104539	0.097233	1.18	0.83	11.36	0.68	1,244.28	0.055%
Oct34-Sep35	7,446,499	0.000181	0.000194	0.172916	0.136644	0.163017	0.164125	0.136629	0.104641	0.097336	1.26	0.88	12.08	1.40	1,245.00	0.113%
Oct35-Sep36	10,597,378	0.000258	0.000276	0.172998	0.136728	0.163099	0.164207	0.136711	0.104723	0.097418	1.32	0.92	12.64	1.96	1,245.56	0.158%
Oct36-Sep37	12,998,409	0.000316	0.000338	0.173060	0.136788	0.163161	0.164269	0.136773	0.104785	0.097480	1.37	0.96	13.16	2.48	1,246.08	0.199%
Oct37-Sep38	12,517,400	0.000305	0.000326	0.173048	0.136776	0.163149	0.164257	0.136761	0.104773	0.097468	1.36	0.95	13.04	2.36	1,245.96	0.190%
Oct38-Sep39	11,137,761	0.000271	0.000290	0.173012	0.136740	0.163113	0.164221	0.136725	0.104737	0.097432	1.33	0.93	12.76	2.08	1,245.68	0.167%
Oct39-Sep40	9,822,945	0.000239	0.000256	0.172978	0.136706	0.163079	0.164187	0.136691	0.104703	0.097398	1.31	0.91	12.52	1.84	1,245.44	0.148%
Oct40-Sep41	8,584,551	0.000209	0.000224	0.172946	0.136674	0.163047	0.164155	0.136659	0.104671	0.097366	1.28	0.90	12.32	1.64	1,245.24	0.132%
Oct41-Sep42	7,550,313	0.000184	0.000197	0.172919	0.136647	0.163020	0.164128	0.136632	0.104644	0.097339	1.26	0.88	12.08	1.40	1,245.00	0.113%
Oct42-Sep43	6,437,801	0.000157	0.000168	0.172890	0.136618	0.162991	0.164099	0.136603	0.104615	0.097310	1.24	0.87	11.92	1.24	1,244.84	0.100%
Oct43-Sep44	4,320,286	0.000105	0.000112	0.172834	0.136562	0.162935	0.164043	0.136547	0.104559	0.097254	1.20	0.84	11.52	0.84	1,244.44	0.068%
Oct44-Sep45	2,615,127	0.000064	0.000068	0.172790	0.136518	0.162891	0.163999	0.136503	0.104515	0.097210	1.16	0.81	11.12	0.44	1,244.04	0.035%
Oct45-Sep46	1,155,944	0.000028	0.000030	0.172752	0.136480	0.162853	0.163961	0.136465	0.104477	0.097172	1.14	0.79	10.88	0.20	1,243.80	0.016%
Oct46-Sep47	(43,800)	(0.000001)	(0.000001)	0.172721	0.136449	0.162822	0.163930	0.136434	0.104446	0.097141	1.11	0.78	10.68	-	1,243.60	0.000%
Total	142,803,744															
From Schedule SS-S4AEII-3 Col 25	Col 1 / (kWh Sales) (Rnd to 6 dec.)	Col 2 * (1 + SUT Rate) Rnd 6	Current Class Avg Rate + Col 3 for Each Rate Class (Col 4 thru Col 10)							(Cur. eGPRC + Col 3) * Avg RS kWh Sum Mo Rnd 2	(Cur. eGPRC + Col 3) * Avg RS kWh Win Mo Rnd 2	(4 * Col 11) + (8 * Col 12)	Col 13 - Current Col 13	Current Col 15 + Col 14	Col 14 / Current Col 15	

	RS	RHS	RLM	GLP	LPL-S	LPL-P	HTS-S
Oct16-Sep17	0.012%	0.015%	0.013%	0.013%	0.015%	0.020%	0.022%
Oct17-Sep18	0.028%	0.035%	0.029%	0.029%	0.035%	0.046%	0.049%
Oct18-Sep19	0.074%	0.094%	0.079%	0.078%	0.094%	0.123%	0.132%
Oct19-Sep20	0.089%	0.112%	0.094%	0.093%	0.112%	0.146%	0.158%
Oct20-Sep21	0.101%	0.128%	0.107%	0.106%	0.128%	0.167%	0.179%
Oct21-Sep22	0.109%	0.138%	0.115%	0.115%	0.138%	0.180%	0.194%
Oct22-Sep23	0.068%	0.086%	0.072%	0.071%	0.086%	0.112%	0.120%
Oct23-Sep24	0.044%	0.056%	0.047%	0.046%	0.056%	0.073%	0.078%
Oct24-Sep25	0.028%	0.035%	0.029%	0.029%	0.035%	0.046%	0.049%
Oct25-Sep26	0.016%	0.021%	0.017%	0.017%	0.021%	0.027%	0.029%
Oct26-Sep27	0.008%	0.010%	0.009%	0.009%	0.010%	0.013%	0.014%
Oct27-Sep28	0.015%	0.019%	0.016%	0.016%	0.019%	0.025%	0.027%
Oct28-Sep29	0.019%	0.024%	0.020%	0.020%	0.024%	0.032%	0.034%
Oct29-Sep30	0.020%	0.026%	0.021%	0.021%	0.026%	0.034%	0.036%
Oct30-Sep31	0.019%	0.023%	0.020%	0.020%	0.023%	0.031%	0.033%
Oct31-Sep32	0.009%	0.012%	0.010%	0.010%	0.012%	0.015%	0.016%
Oct32-Sep33	0.006%	0.008%	0.007%	0.007%	0.008%	0.011%	0.011%
Oct33-Sep34	0.053%	0.067%	0.056%	0.056%	0.067%	0.087%	0.094%
Oct34-Sep35	0.112%	0.142%	0.119%	0.118%	0.142%	0.186%	0.200%
Oct35-Sep36	0.160%	0.202%	0.170%	0.168%	0.202%	0.264%	0.284%
Oct36-Sep37	0.196%	0.248%	0.208%	0.206%	0.248%	0.324%	0.348%
Oct37-Sep38	0.189%	0.239%	0.200%	0.199%	0.239%	0.312%	0.336%
Oct38-Sep39	0.168%	0.213%	0.178%	0.177%	0.213%	0.278%	0.299%
Oct39-Sep40	0.148%	0.188%	0.157%	0.156%	0.188%	0.245%	0.264%
Oct40-Sep41	0.130%	0.164%	0.138%	0.137%	0.164%	0.214%	0.231%
Oct41-Sep42	0.114%	0.144%	0.121%	0.120%	0.144%	0.189%	0.203%
Oct42-Sep43	0.097%	0.123%	0.103%	0.102%	0.123%	0.161%	0.173%
Oct43-Sep44	0.065%	0.082%	0.069%	0.068%	0.082%	0.107%	0.115%
Oct44-Sep45	0.039%	0.050%	0.042%	0.041%	0.050%	0.065%	0.070%
Oct45-Sep46	0.017%	0.022%	0.018%	0.018%	0.022%	0.029%	0.031%
Oct46-Sep47	-0.001%	-0.001%	-0.001%	-0.001%	-0.001%	-0.001%	-0.001%

<sup>1</sup>All customers assumed to have BGS Supply

**PSE&G Solar 4 All Extension II**  
**Cumulative Rate Impact Analysis - Electric Green Programs Recovery Charge (GPRC)**

**Rate Calculations**

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
	CA	EEE	DR	S4A	SLII	EEE Ext	S4AE	SLIII	EEEXII	Total Existing eGPRC	Proposed S4AEII	Total Proposed eGPRC	SPRC
<b>Revenue Requirement</b>													
Oct16-Sep17	\$2,074,584	\$2,737,263	\$2,279,545	\$21,924,967	\$12,336,803	\$11,378,367	\$5,792,520	\$42,368	\$5,266,225	\$63,832,641	\$832,967	\$64,665,607	\$7,066,270
Oct17-Sep18	\$1,973,724	\$366,792	\$1,832,419	\$19,052,904	\$12,062,123	\$10,684,035	\$4,521,405	\$1,102,674	\$7,648,539	\$59,244,615	\$1,836,669	\$61,081,284	\$6,912,170
Oct18-Sep19	\$1,795,140	-\$360,061	\$1,368,974	\$17,473,373	\$11,760,400	\$5,353,005	\$1,900,705	\$2,084,212	\$4,854,994	\$46,230,741	\$4,950,398	\$51,181,139	\$6,684,777
Oct19-Sep20	\$1,014,270	-\$412,701	\$865,967	\$16,779,864	\$11,343,895	\$1,581,047	\$4,246,265	\$2,151,984	\$4,291,631	\$41,862,220	\$5,861,503	\$47,723,723	\$6,369,964
Oct20-Sep21	\$644,293	-\$405,381	\$243,763	\$14,417,565	\$10,720,288	\$231,494	\$5,340,877	\$2,053,240	\$6,949,382	\$40,195,522	\$6,685,855	\$46,881,377	\$5,495,545
<b>Rate w/o SUT</b>													
Current	\$0.000065	\$0.000256	-\$0.000054	\$0.000319	\$0.000189	\$0.000337	\$0.000185	\$0.000038	\$0.000052	\$0.001387	\$0.000000	\$0.001387	\$0.000043
Oct16-Sep17	\$0.000050	\$0.000067	\$0.000055	\$0.000533	\$0.000300	\$0.000277	\$0.000141	\$0.000001	\$0.000128	\$0.001552	\$0.000020	\$0.001572	\$0.000172
Oct17-Sep18	\$0.000048	\$0.000009	\$0.000045	\$0.000464	\$0.000293	\$0.000260	\$0.000110	\$0.000027	\$0.000186	\$0.001442	\$0.000045	\$0.001487	\$0.000168
Oct18-Sep19	\$0.000044	-\$0.000009	\$0.000033	\$0.000425	\$0.000286	\$0.000130	\$0.000046	\$0.000051	\$0.000118	\$0.001124	\$0.000120	\$0.001244	\$0.000163
Oct19-Sep20	\$0.000025	-\$0.000010	\$0.000021	\$0.000408	\$0.000276	\$0.000038	\$0.000103	\$0.000052	\$0.000104	\$0.001017	\$0.000143	\$0.001160	\$0.000155
Oct20-Sep21	\$0.000016	-\$0.000010	\$0.000006	\$0.000351	\$0.000261	\$0.000006	\$0.000130	\$0.000050	\$0.000169	\$0.000979	\$0.000163	\$0.001142	\$0.000134

**Rate Impact Analysis**

Annual MWh Forecast = 41,104,726  
 SUT 7%

7,200 Avg RS kWh / yr.  
 750 Avg RS kWh / Summer Month  
 525 Avg RS kWh / Winter Month

0.001484 Current electric GPRC (\$/kWh)

	(1)	(2)	(3)	(4)	(5) - (11) Class Average Rate w/SUT - \$/kWh <sup>1</sup>							(12) - (14) Typical RS GPRC (\$)			(15)	(16)	
	SPRC w/ SUT (\$/kWh)	Electric GPRC w/ SUT (\$/kWh)	Electric GPRC + SPRC w/o SUT (\$/kWh)	Electric GPRC + SPRC w/ SUT (\$/kWh)	RS	RHS	RLM	GLP	LPL-S	LPL-P	HTS-S	Summer Monthly Bill	Winter Monthly Bill	Annual Bill	RS Typical Annual Bill (\$'s)	% Change in RS Typical Annual Bill	
			Current less Electric RRC		0.171238	0.134966	0.161339	0.162447	0.134951	0.102963	0.095658				-	1,243.60	
Oct16-Sep17	0.000184	0.001682	\$0.001744	<b>\$0.001866</b>	0.173104	0.136832	0.163205	0.164313	0.136817	0.104829	0.097524	1.40	0.98	13.44	1,257.04	1.081%	
Oct17-Sep18	0.000180	0.001591	\$0.001655	<b>\$0.001771</b>	0.173009	0.136737	0.163110	0.164218	0.136722	0.104734	0.097429	1.33	0.93	12.76	1,269.80	1.026%	
Oct18-Sep19	0.000174	0.001331	\$0.001407	<b>\$0.001505</b>	0.172743	0.136471	0.162844	0.163952	0.136456	0.104468	0.097163	1.13	0.79	10.84	1,280.64	0.872%	
Oct19-Sep20	0.000166	0.001241	\$0.001315	<b>\$0.001407</b>	0.172645	0.136373	0.162746	0.163854	0.136358	0.104370	0.097065	1.05	0.74	10.12	1,290.76	0.814%	
Oct20-Sep21	0.000143	0.001222	\$0.001276	<b>\$0.001365</b>	0.172603	0.136331	0.162704	0.163812	0.136316	0.104328	0.097023	1.03	0.72	9.88	1,300.64	0.794%	
	$\frac{(\text{Col M} * (1 + \text{SUT Rate}))}{[\text{Rnd } 6]}$	$\frac{(\text{Col L} * (1 + \text{SUT Rate}))}{[\text{Rnd } 6]}$	$\frac{(\text{Col 1} + \text{Col 2})}{[\text{Rnd } 6]}$	$\frac{(\text{Col 3} * (1 + \text{SUT Rate}))}{[\text{Rnd } 6]}$	Current Class Avg Rate + Col 4 for Each Rate Class (Col 5 thru Col 11)							Col 1 * Sum Mo kWh Rnd 2 + Col 2 * Sum Mo kWh Rnd 2	Col 1 * Win Mo kWh Rnd 2 + Col 2 * Win Mo kWh Rnd 2	(4 * Col 12) + (8 * Col 13)	Current Col 15 + Col 14	Col 14 / Current Col 15	

	% Change from Current Class Average Rate w/SUT						
	RS	RHS	RLM	GLP	LPL-S	LPL-P	HTS-S
Oct16-Sep17	1.090%	1.383%	1.157%	1.149%	1.383%	1.812%	1.951%
Oct17-Sep18	1.034%	1.312%	1.098%	1.090%	1.312%	1.720%	1.851%
Oct18-Sep19	0.879%	1.115%	0.933%	0.926%	1.115%	1.462%	1.573%
Oct19-Sep20	0.822%	1.042%	0.872%	0.866%	1.043%	1.367%	1.471%
Oct20-Sep21	0.797%	1.011%	0.846%	0.840%	1.011%	1.326%	1.427%

<sup>1</sup> All customers assumed to have BGS Supply

**PSE&G Solar 4 All Extension II**  
**Under/(Over) Calculation**

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Existing / Forecasted SGIP Ext II Rate (w/o SU)	0.000000	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
	1	2	3	4	5	6	7
<b>GPRC S4AE II Under/(Over) Calculation</b>	<u>Sep-16</u>	<u>Oct-16</u>	<u>Nov-16</u>	<u>Dec-16</u>	<u>Jan-17</u>	<u>Feb-17</u>	<u>Mar-17</u>
(1) SGIEIIP GPRC Revenue	-	59,602	57,577	65,866	68,271	66,716	66,244
(2) Revenue Requirements (excluding Incremental WACC)	-	67,886	67,886	67,886	69,923	69,923	69,923
(3) Monthly Under/(Over) Recovery	-	8,285	10,310	2,020	1,652	3,207	3,679
(4) Deferred Balance	-	8,285	18,594	20,614	22,266	25,473	29,152
(5) Monthly Interest Rate	0.34309%	0.34309%	0.34309%	0.34309%	0.34309%	0.34309%	0.34309%
(6) After Tax Monthly Interest Expense/(Credit)	-	14.2	46.1	67.3	73.6	81.9	93.7
(7) Cumulative Interest	-	14.2	60.3	127.6	201.1	283.0	376.7
(8) Balance Added to Subsequent Year's Revenue Requirements	-	8,298.8	18,654.7	20,742.0	22,467.4	25,755.9	29,528.4
(9) Net Sales - kWh (000)	3,328,426	2,980,091	2,878,837	3,293,316	3,413,563	3,335,823	3,312,211
(10) Incremental Interest From WACC Change							
(11) Cummulative Incremental Interest							
(12) Average Net of Tax Deferred Balance	-	2,450	7,949	11,596	12,682	14,119	16,155

**PSE&G Solar 4 All Extension II**  
**Under/(Over) Calculation**

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Existing / Forecasted SGIP Ext II Rate (w/o SU)	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
	8	9	10	11	12	13	
<b>GPRC S4AE II Under/(Over) Calculation</b>	<u>Apr-17</u>	<u>May-17</u>	<u>Jun-17</u>	<u>Jul-17</u>	<u>Aug-17</u>	<u>Sep-17</u>	
(1) SGIEIIP GPRC Revenue	58,993	63,936	73,890	88,793	85,770	66,435	SGIEIIP Rate * Row 9
(2) Revenue Requirements (excluding Incremental WACC)	69,923	69,923	69,923	69,923	69,923	69,923	From SS-S4AEII-3, Col 24
(3) Monthly Under/(Over) Recovery	10,930	5,987	(3,967)	(18,870)	(15,847)	3,488	Row 2 - Row 1
(4) Deferred Balance	40,082	46,068	42,102	23,232	7,385	10,872	Prev Row 4 + Row 3
(5) Monthly Interest Rate	0.34309%	0.34309%	0.34309%	0.34309%	0.34309%	0.34309%	Monthly Interest Rate
(6) After Tax Monthly Interest Expense/(Credit)	118.8	147.8	151.2	112.1	52.5	31.3	(Prev Row 4 + Row 4) / 2 * (1 - Tax Rate) * Row 5
(7) Cumulative Interest	495.5	643.3	794.5	906.6	959.1	990.4	Prev Row 7 + Row 6
(8) Balance Added to Subsequent Year's Revenue Requirements	40,577.0	46,711.6	42,896.3	24,138.3	8,343.6	11,862.6	Row 4 + Row 7 + Row 11
(9) Net Sales - kWh (000)	2,949,657	3,196,813	3,694,478	4,439,658	4,288,510	3,321,769	
(10) Incremental Interest From WACC Change							
(11) Cummulative Incremental Interest							Prev Row 11 + Row 10
(12) Average Net of Tax Deferred Balance	20,476	25,479	26,076	19,322	9,055	5,399	(Prev Row 4 + Row 4) / 2 * (1 - Tax Rate)

**PSE&G Solar 4 All Extension II**  
**Income Statement and Balance Sheet**  
**Solar 4 All Extension II: Total Program**

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<u>Income Statement</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>
<b>Operating Revenue</b>												
Energy	-	-	603	2,271	3,801	5,504	6,627	6,857	7,221	7,445	7,671	7,947
Capacity	-	-	-	-	-	-	-	-	-	-	-	-
Other Revenue--Solar	-	-	1,547	9,082	15,488	20,820	25,140	24,426	23,758	23,045	22,498	21,710
Other	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Requirements	204	839	3,129	4,803	6,113	7,154	5,978	4,107	2,629	1,698	881	682
Total Operating Revenue	204	839	5,279	16,157	25,403	33,478	37,744	35,390	33,608	32,188	31,050	30,340
<b>Operating Expenses</b>												
Operation & Maintenance	-	-	263	963	1,616	2,219	2,632	2,671	2,711	2,752	2,793	2,834
Administrative	204	839	864	890	917	944	1,163	1,197	1,233	1,270	1,308	1,348
Rent	-	-	466	1,605	2,640	3,572	4,141	4,141	4,141	4,141	4,141	4,141
Insurance	-	-	44	155	261	360	426	434	443	452	461	470
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	204	839	1,637	3,614	5,434	7,095	8,362	8,444	8,529	8,615	8,703	8,793
<b>Depreciation and Amortization</b>												
Depreciation	-	-	1,315	4,812	7,967	10,800	12,654	12,654	12,654	12,654	12,654	12,751
Amortization of State Rebate	-	-	-	-	-	-	-	-	-	-	-	-
Total Depreciation and Amortization	-	-	1,315	4,812	7,967	10,800	12,654	12,654	12,654	12,654	12,654	12,751
<b>Operating Income</b>												
AFUDC	9	1,177	3,401	3,074	2,804	1,969	(0)	(0)	(0)	(0)	(0)	(0)
Interest Expense	3	360	1,425	2,178	2,814	3,188	2,787	2,390	2,100	1,877	1,712	1,610
<b>Income Before Income Taxes</b>	7	817	4,303	8,628	11,992	14,365	13,942	11,902	10,326	9,043	7,982	7,186
ITC Adjustment	-	-	(435)	(1,483)	(2,360)	(3,040)	(3,419)	(3,419)	(3,419)	(3,419)	(3,419)	(3,430)
Income Tax Expense	(0)	(8)	850	2,926	4,559	5,911	6,394	5,560	4,917	4,392	3,959	3,636
<b>Net Income</b>	7	825	3,887	7,184	9,793	11,494	10,967	9,761	8,829	8,069	7,442	6,980
Preferred Dividends	-	-	-	-	-	-	-	-	-	-	-	-
<b>Earnings Available to PSEG</b>	7	825	3,887	7,184	9,793	11,494	10,967	9,761	8,829	8,069	7,442	6,980
<u>Balance Sheet</u>												
<b>Assets</b>												
Plant In-Service	-	-	73,161	145,093	216,755	288,155	288,155	288,155	288,155	288,155	288,155	290,405
Plant in CWIP	1,198	38,943	41,374	40,682	35,966	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Less: Accumulated Depreciation	-	-	1,315	6,126	14,093	24,893	37,547	50,200	62,854	75,508	88,162	100,912
Net Property, Plant & Equipment	1,198	38,943	113,220	179,648	238,629	263,262	250,608	237,954	225,301	212,647	199,993	189,492
Deferred Income Taxes:												
Deferred Tax Asset	-	-	(12,047)	(28,112)	(41,347)	(61,717)	(83,943)	(95,906)	(101,245)	(102,403)	(98,685)	(92,661)
State Rebate	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Assets</b>	1,198	38,943	101,172	151,537	197,282	201,545	166,665	142,048	124,056	110,244	101,308	96,831
<b>Liabilities</b>												
Unamortized State Rebate	-	-	-	-	-	-	-	-	-	-	-	-
Accumulated Deferred ITC	-	-	21,514	41,610	57,883	70,550	67,131	63,712	60,293	56,874	53,455	50,251
Regulatory Liability	-	-	(12,047)	(28,112)	(41,347)	(61,717)	(83,943)	(95,906)	(101,245)	(102,403)	(98,685)	(92,661)
Deferred Income Taxes:												
Plant Related	-	-	11,512	25,111	36,256	50,886	63,335	69,713	72,172	72,159	69,261	65,044
Capitalization:												
Debt	585	19,004	39,135	55,109	70,511	69,211	58,629	51,010	45,304	40,804	37,711	36,209
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-	-
Common Equity	614	19,939	41,059	57,819	73,979	72,614	61,513	53,519	47,532	42,810	39,566	37,989
Total Capitalization	1,198	38,943	80,194	112,927	144,490	141,825	120,142	104,529	92,835	83,614	77,277	74,198
<b>Total Liabilities</b>	1,198	38,943	101,172	151,537	197,282	201,545	166,665	142,048	124,056	110,244	101,308	96,831

**PSE&G Solar 4 All Extension  
Income Statement and Balance Sheet  
Solar 4 All Extension II: Total Program**

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<u>Income Statement</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>	<u>2035</u>	<u>2036</u>	<u>2037</u>	<u>2038</u>	<u>2039</u>	<u>2040</u>
<b>Operating Revenue</b>													
Energy	8,197	8,367	8,602	8,820	9,113	9,319	9,528	9,769	10,122	10,374	10,632	10,896	11,167
Capacity	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Revenue--Solar	20,856	20,134	19,498	18,909	18,338	16,957	11,929	7,264	3,300	155	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Requirements	<u>1,079</u>	<u>1,346</u>	<u>1,358</u>	<u>1,151</u>	<u>499</u>	<u>815</u>	<u>4,814</u>	<u>8,446</u>	<u>11,287</u>	<u>13,344</u>	<u>12,182</u>	<u>10,813</u>	<u>9,511</u>
Total Operating Revenue	30,132	29,848	29,458	28,881	27,950	27,091	26,271	25,479	24,709	23,873	22,813	21,709	20,678
<b>Operating Expenses</b>													
Operation & Maintenance	2,877	2,920	2,963	3,007	3,052	3,098	3,144	3,191	3,238	3,287	3,336	3,385	3,436
Administrative	1,388	1,430	1,473	1,517	1,562	1,609	1,658	1,707	1,759	1,811	1,866	1,922	1,979
Rent	4,141	4,141	4,141	4,141	4,141	4,141	4,141	4,141	4,141	4,141	4,141	4,141	4,141
Insurance	479	489	499	509	519	529	540	551	562	573	584	596	608
Other	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	<u>8,885</u>	<u>8,980</u>	<u>9,076</u>	<u>9,174</u>	<u>9,275</u>	<u>9,377</u>	<u>9,482</u>	<u>9,590</u>	<u>9,700</u>	<u>9,812</u>	<u>9,927</u>	<u>10,044</u>	<u>10,164</u>
<b>Depreciation and Amortization</b>													
Depreciation	12,943	12,899	12,856	12,764	12,575	12,575	12,575	12,575	12,575	12,477	12,095	11,623	11,196
Amortization of State Rebate	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Depreciation and Amortization	<u>12,943</u>	<u>12,899</u>	<u>12,856</u>	<u>12,764</u>	<u>12,575</u>	<u>12,575</u>	<u>12,575</u>	<u>12,575</u>	<u>12,575</u>	<u>12,477</u>	<u>12,095</u>	<u>11,623</u>	<u>11,196</u>
<b>Operating Income</b>	8,304	7,969	7,526	6,943	6,101	5,139	4,214	3,315	2,435	1,584	792	42	(683)
AFUDC	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Interest Expense	<u>1,569</u>	<u>1,532</u>	<u>1,478</u>	<u>1,402</u>	<u>1,284</u>	<u>1,157</u>	<u>1,038</u>	<u>923</u>	<u>812</u>	<u>704</u>	<u>599</u>	<u>498</u>	<u>404</u>
<b>Income Before Income Taxes</b>	6,735	6,437	6,048	5,541	4,817	3,982	3,176	2,392	1,623	880	193	(457)	(1,087)
ITC Adjustment	(3,406)	(3,298)	(3,210)	(3,141)	(3,092)	(3,092)	(3,092)	(3,092)	(3,092)	(3,081)	(3,042)	(2,995)	(2,952)
Income Tax Expense	<u>3,448</u>	<u>3,304</u>	<u>3,127</u>	<u>2,906</u>	<u>2,599</u>	<u>2,258</u>	<u>1,929</u>	<u>1,609</u>	<u>1,294</u>	<u>989</u>	<u>701</u>	<u>426</u>	<u>159</u>
<b>Net Income</b>	6,694	6,432	6,131	5,776	5,310	4,815	4,339	3,875	3,420	2,972	2,535	2,113	1,706
Preferred Dividends	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Earnings Available to PSEG</b>	6,694	6,432	6,131	5,776	5,310	4,815	4,339	3,875	3,420	2,972	2,535	2,113	1,706
<b>Balance Sheet</b>													
<b>Assets</b>													
Plant In-Service	295,130	299,630	303,905	306,155	306,155	306,155	306,155	306,155	306,155	306,155	306,155	306,155	306,155
Plant in CWIP	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Less: Accumulated Depreciation	<u>113,855</u>	<u>126,754</u>	<u>139,611</u>	<u>152,375</u>	<u>164,949</u>	<u>177,524</u>	<u>190,098</u>	<u>202,673</u>	<u>215,247</u>	<u>227,725</u>	<u>239,820</u>	<u>251,443</u>	<u>262,639</u>
Net Property, Plant & Equipment	181,275	172,875	164,294	153,780	141,206	128,631	116,057	103,482	90,908	78,430	66,335	54,712	43,516
Deferred Income Taxes:													
Deferred Tax Asset	(87,195)	(82,465)	(78,116)	(73,870)	(69,304)	(64,070)	(58,375)	(52,347)	(46,073)	(39,774)	(33,694)	(27,869)	(22,261)
State Rebate	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Assets</b>	94,080	90,411	86,178	79,910	71,902	64,561	57,682	51,135	44,834	38,656	32,641	26,843	21,255
<b>Liabilities</b>													
Unamortized State Rebate	-	-	-	-	-	-	-	-	-	-	-	-	-
Accumulated Deferred ITC	47,317	44,469	41,686	38,770	35,678	32,586	29,494	26,403	23,311	20,229	17,188	14,193	11,240
Regulatory Liability	(87,195)	(82,465)	(78,116)	(73,870)	(69,304)	(64,070)	(58,375)	(52,347)	(46,073)	(39,774)	(33,694)	(27,869)	(22,261)
Deferred Income Taxes:													
Plant Related	61,212	57,833	54,693	51,586	48,254	44,527	40,526	36,330	31,987	27,632	23,415	19,358	15,438
Capitalization:													
Debt	35,500	34,440	33,142	30,951	27,949	25,141	22,465	19,886	17,377	14,917	12,558	10,327	8,216
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-	-	-
Common Equity	<u>37,246</u>	<u>36,134</u>	<u>34,772</u>	<u>32,473</u>	<u>29,324</u>	<u>26,377</u>	<u>23,570</u>	<u>20,864</u>	<u>18,232</u>	<u>15,651</u>	<u>13,175</u>	<u>10,835</u>	<u>8,621</u>
Total Capitalization	<u>72,746</u>	<u>70,573</u>	<u>67,915</u>	<u>63,424</u>	<u>57,273</u>	<u>51,518</u>	<u>46,036</u>	<u>40,750</u>	<u>35,610</u>	<u>30,568</u>	<u>25,733</u>	<u>21,161</u>	<u>16,837</u>
<b>Total Liabilities</b>	94,080	90,411	86,178	79,910	71,902	64,561	57,682	51,135	44,834	38,656	32,641	26,843	21,255

**PSE&G Solar 4 All Extension II  
Income Statement and Balance Sheet  
Solar 4 All Extension II: Total Program**

Schedule SS-S4AEII-8

Page 3 of 3

<u>Income Statement</u>	<u>2041</u>	<u>2042</u>	<u>2043</u>	<u>2044</u>	<u>2045</u>	<u>2046</u>	<u>2047</u>
<b>Operating Revenue</b>							
Energy	11,444	11,729	11,002	7,868	4,908	2,147	-
Capacity	-	-	-	-	-	-	-
Other Revenue--Solar	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
Revenue Requirements	8,314	7,337	5,783	3,776	2,089	640	(0)
Total Operating Revenue	19,759	19,066	16,785	11,643	6,997	2,787	(0)
<b>Operating Expenses</b>							
Operation & Maintenance	3,487	3,539	3,288	2,331	1,441	624	-
Administrative	2,039	2,100	1,919	1,364	832	325	-
Rent	4,141	4,141	3,675	2,536	1,501	569	-
Insurance	620	633	573	403	243	94	-
Other	-	-	-	-	-	-	-
Total Operating Expenses	10,287	10,412	9,456	6,635	4,017	1,613	-
<b>Depreciation and Amortization</b>							
Depreciation	10,865	10,775	9,650	6,669	3,983	1,574	-
Amortization of State Rebate	-	-	-	-	-	-	-
Total Depreciation and Amortization	10,865	10,775	9,650	6,669	3,983	1,574	-
<b>Operating Income</b>	(1,393)	(2,121)	(2,321)	(1,660)	(1,003)	(400)	(0)
AFUDC	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Interest Expense	314	227	143	76	30	5	(0)
<b>Income Before Income Taxes</b>	(1,708)	(2,348)	(2,464)	(1,735)	(1,033)	(405)	(0)
ITC Adjustment	(2,920)	(2,912)	(2,540)	(1,646)	(900)	(322)	-
Income Tax Expense	(101)	(365)	(481)	(366)	(232)	(95)	(0)
<b>Net Income</b>	1,313	928	557	277	99	11	(0)
Preferred Dividends	-	-	-	-	-	-	-
<b>Earnings Available to PSEG</b>	1,313	928	557	277	99	11	(0)
<u>Balance Sheet</u>							
<b>Assets</b>	<u>2041</u>	<u>2042</u>	<u>2043</u>	<u>2044</u>	<u>2045</u>	<u>2046</u>	<u>2047</u>
Plant In-Service	306,155	306,155	306,155	306,155	306,155	306,155	306,155
Plant in CWIP	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Less: Accumulated Depreciation	273,504	284,279	293,929	300,597	304,581	306,155	306,155
Net Property, Plant & Equipment	32,650	21,876	12,226	5,557	1,574	(0)	(0)
Deferred Income Taxes:							
Deferred Tax Asset	(16,803)	(11,373)	(6,462)	(2,994)	(865)	0	0
State Rebate	-	-	-	-	-	-	-
<b>Total Assets</b>	15,848	10,503	5,763	2,563	709	(0)	(0)
<b>Liabilities</b>							
Unamortized State Rebate	-	-	-	-	-	-	-
Accumulated Deferred ITC	8,320	5,409	2,868	1,222	322	(0)	(0)
Regulatory Liability	(16,803)	(11,373)	(6,462)	(2,994)	(865)	0	0
Deferred Income Taxes:							
Plant Related	11,613	7,807	4,391	2,010	572	0	0
Capitalization:							
Debt	6,206	4,226	2,424	1,135	332	(0)	(0)
Preferred Stock	-	-	-	-	-	-	-
Common Equity	6,511	4,434	2,543	1,191	348	(0)	(0)
Total Capitalization	12,717	8,661	4,967	2,326	680	(0)	(0)
<b>Total Liabilities</b>	15,848	10,503	5,763	2,563	709	(0)	(0)

1                   **PUBLIC SERVICE ELECTRIC AND GAS COMPANY**  
2                   **DIRECT TESTIMONY**  
3                   **OF**  
4                   **DONNA M. POWELL**  
5                   **ASSISTANT CONTROLLER**

6   **Q.    Please state your name, affiliation and business address.**

7   A.    My name is Donna M. Powell and I am an Assistant Controller of Public  
8        Service Enterprise Group, Inc. (“PSEG”) Services Corporation. My business  
9        address is 80 Park Plaza, Newark, New Jersey. My professional background  
10       and qualifications as a witness in this proceeding are included in Schedule  
11       DMP-S4AEII-1 of this testimony.

12   **SCOPE OF TESTIMONY**

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

14   A.    The purpose of my testimony is to describe the accounting for the Public  
15        Service Electric and Gas Company’s (“PSE&G” or “Company”) Solar 4 All®  
16        Extension II Program (“Extension II Program” or “Program”). My testimony  
17        provides the accounting entries to record expenditures and recovery associated  
18        with the program as described in the testimony of Stephen Swetz (Attachment  
19        B).

1 **PROGRAM COSTS**

2 **Q. Please provide the accounting entries associated with the Program costs**  
3 **described by Mr. Swetz.**

4 A. PSE&G is proposing to recover the revenue requirements associated with the  
5 direct costs of the Program. Direct costs include all Program capital  
6 expenditures and Operations and Maintenance Costs, including the  
7 administrative costs of running the Program. These costs would be offset by  
8 all the net benefits derived from the Program, including, but not limited to, the  
9 solar electrical output, the net SREC revenue as well as the amortization of the  
10 applicable solar investment tax credit (“ITC”) utilized by PSE&G. The  
11 following is a description of each cost element and the associated accounting  
12 entries.

13 (1) The Program capital assets will include solar panels, inverters, metering and  
14 communications equipment. The investment in the solar installations will be  
15 recorded as Construction Work in Progress (“CWIP”).

16	107 CWIP– Solar 4 All Extension II	XXX
17	131 Cash (payroll, outside services, M&S)	XXX

18 (2) If the construction period is longer than 60 days then the Company will also  
19 accrue an allowance for funds used during construction (“AFUDC”) in  
20 accordance with our capitalization policy.

1	107 CWIP – Solar 4 All Extension II	XXX	
2	419 Allowance for Other Funds		XXX
3	432 Allowance for Borrowed Funds		XXX

4 (3) When construction is complete the solar assets will be transferred into plant in  
5 service.

6	346 Miscellaneous Power Plant Equipment	XXX	
7	CWIP – Solar 4 All Extension II		XXX

8 (4) The solar panels will be depreciated over 25 years or the life of the agreement  
9 with the host site if it is less than 25 years. The metering assets will be  
10 depreciated over 25 years and the inverters and the communication assets will  
11 be depreciated over 10 years.

12	403 Depreciation Expense	XXX	
13	108 Accumulated Depreciation		XXX

14 (5) The Company will record the ITC received on the solar assets and amortize the  
15 credit to the income statement on a straight line basis over the book life of the  
16 equipment. The deferral:

17	236 Taxes Accrued	XXX	
18	410.1 Deferred Income Tax	XXX	
19	409.1 Income Taxes		XXX
20	255 Accumulated Deferred ITC		XXX

21 (6) The amortization over the book life:

22	255 Accumulated Deferred ITC	XXX	
23	411.4 Investment Tax Credit Adjustments		XXX

1 (7) The tax basis of the solar assets will be the original cost of the assets reduced  
2 by 50% of the solar ITC. The book-tax basis difference is amortized to income  
3 on a straight-line basis over the book life of the assets. Since the book cost  
4 exceeds the tax basis a portion of the book depreciation is not deductible.  
5 Therefore this flow through of the basis difference will increase income tax  
6 expense

7	409.1 Income Taxes	XXX	
8	236 Taxes Accrued		XXX

9 (8) The Company will incur operation and maintenance expenses associated with  
10 the solar installations which will be recorded in the appropriate Other Power  
11 Generation expense accounts.

12	549 Miscellaneous Operation Expense	XXX	
13	554 Miscellaneous Maintenance Expense	XXX	
14	131 Cash		XXX

15 **ACCOUNTING FOR THE SOLAR OUTPUT**

16 **Q. Please describe the accounting entries associated with the solar output of the**  
17 **Program as described by Mr. Swetz.**

18 A. The accounting entries for the output of the Program are as follows:

19 (9) The Company will record the receipt of SRECs at their current market value  
20 and credit the regulatory asset.

21	174 Misc Current and Accrued Assets – SRECS	XXX	
22	182 Regulatory Asset – Solar 4 All Extension II		XXX

1 (10) The SRECs received from all of the solar installations will be sold in the SREC  
2 Auction approved by the BPU. The net gain or loss from the SREC sales will  
3 be charged to the regulatory asset.

4	131 Cash	XXX	
5	182 Regulatory Asset – Solar 4 All Extension II	XXX	XXX
6	174 Misc. Current & Accrued Assets – SRECS		XXX

7 (11) The output from the solar systems will be sold in the PJM market and the net  
8 revenues will offset the revenue requirements of the Program.

9	131 Cash	XXX	
10	447 Sales for Resale – Solar 4 All Extension II		XXX

11 **INCOME TAXES**

12 **Q. Please describe how deferred income taxes will be recorded, and include the**  
13 **associated entries.**

14 A. The Company will record deferred incomes taxes for all of the tax-book timing  
15 differences that result from this Program. The different lives and methods for  
16 tax versus book depreciation and entries to regulatory asset or liability  
17 accounts represent timing differences. The Company will record deferred  
18 income taxes as discussed above. For Ratemaking purposes computation of  
19 ADIT will be based on the tax normalization method of accounting as required  
20 by IRS and applicable Treasury Regulations and as interpreted by the IRS  
21 through private letter rulings.

1 (14) Record deferred income taxes on book timing differences.

2	410.1 Deferred Income taxes	XXX	
3	282 Accumulated Deferred Income Taxes		XXX

4 Or

5	411.1 Deferred Income taxes – Credit		XXX
6	282 Accumulated Deferred Income Taxes	XXX	

7 **OVER/UNDER COLLECTION**

8 **Q. Please provide the accounting entries associated with the monthly Over/Under**  
9 **collection.**

10 A. Each month the actual revenue collected through the Solar Generation  
11 Investment Extension II Program Component (“SGIEIIPC”) of the electric  
12 Green Programs Recovery Charge (“GPRC”) will be compared to that month’s  
13 revenue requirement. The difference will be deferred as a regulatory asset or  
14 regulatory liability with an offsetting charge or credit to expense.

15 (15) To record the monthly Solar 4 All Extension II revenue.

16	142 Customer Accounts Receivable	XXX	
17	400 Operating Revenues		XXX

18 (16) For an under collection the entry will be:

19	182 Regulatory Assets – Solar 4 All Extension II	XXX	
20	407.4 Regulatory Credits		XXX

21 For an over collection the entry will be:

1	407.3 Regulatory Debits	XXX
2	254 Regulatory Liabilities – Solar 4 All Extension II	XXX

3 **Q. Please provide the accounting entries for posting the interest required on the**  
4 **over/under collection proposed by this Program.**

5 A. Any over/under recovery of the actual revenue requirements compared to  
6 revenues will be deferred. In calculating the monthly interest on net over and  
7 under recoveries, the interest rate shall be based upon the Company’s interest  
8 rate obtained on its commercial paper and/or bank credit lines utilized in the  
9 preceding month. If both commercial paper and bank credit lines have been  
10 utilized, the weighted average of both sources of capital shall be used. In the  
11 event that neither commercial paper nor bank credit lines were utilized in the  
12 preceding month, the last calculated rate will be used:

13 For an under collection the entry will be:

14	(17) 182 Regulatory Assets – Solar 4 All Extension II	XXX
15	431 Interest Expense	XXX

16 For an over collection the entry will be:

17	431 Interest Expense	XXX
18	254 Regulatory Liabilities – Solar 4 All Extension II	XXX

19 At the end of the initial and each annual period, the corresponding deferred  
20 balances would be included in the forecasted revenue requirements for the next period  
21 for the GPRC clause.

1 **HISTORICAL FINANCIAL INFORMATION**

2 **Q. Please provide the historical financial data required to be included with this**  
3 **filing.**

4 A. The following financial data, as required by the applicable sections of N.J.A.C.

5 14:1-5.11 and N.J.A.C. 14:1-5.12, are included with my testimony.

6 Schedule DMP-S4AE-2 - Balance Sheets – 2012 to 2014

7 Schedule DMP-S4AE-3 - Income Statements – 2012 to 2014

8 Schedule DMP-S4AE-4 - Balance Sheet – 12/2014

9 Schedule DMP-S4AE-5 - Revenue by Class of Business - 2014

10 Schedule DMP-S4AE-6 - Affiliate Payments - 2012 to 2014

11 **Q. Does this conclude your testimony?**

12 A. Yes, it does.

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**  
**PROFESSIONAL QUALIFICATIONS**  
**OF**  
**DONNA M. POWELL**  
**ASSISTANT CONTROLLER**

I hold a B.S in Accounting from Villanova University and I am a Certified Public Accountant. I have been employed at PSEG Services since February 2012, serving as Assistant Controller-PSE&G. I have previously testified on behalf of PSE&G to the BPU. In my role as Assistant Controller – PSE&G, I am responsible for all regulatory accounting matters for PSE&G and I direct the utility accounting functions including regulatory compliance thereon.

Prior to joining PSEG I had been employed by New Jersey American Water Company from 2007 to 2012 as Vice-President of Finance where I was responsible for all of the financial aspects of that Company, including business planning, regulatory strategy and rate support, and all financial, statutory and management reporting. From 1998 to 2007, I worked in various financial capacities at Pepco Holdings, Inc. (formerly Conectiv, Inc. and Atlantic City Electric Company), including testifying before the New Jersey Board of Public Utilities in 1998 in support of Atlantic City Electric Company's request for stranded cost recovery as a result of deregulation. I also worked for nine years with Deloitte & Touche in various capacities from entry level auditor through Senior Manager, where, in that role, I worked primarily in the utility sector and was designated a utility industry accounting and auditing expert.

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**

**BALANCE SHEET**  
**\$ (In Thousands)**

	<u>Dec 31, 2012</u>	<u>Dec 31, 2013</u>	<u>Dec 31, 2014</u>
Assets and Other Debits			
Utility Plant			
Electric Utility Plant			
101	\$ 10,112,683	\$ 10,373,401	\$ 12,091,893
103	-	-	-
105	6,297	3,111	15,473
106	403,883	1,476,388	1,839,081
107	1,043,312	1,601,292	1,297,706
	11,566,175	13,454,192	15,244,153
Gas Utility Plant			
101	5,319,596	5,483,218	5,731,303
103	-	-	-
105	4	4	4
106	2,692	2,467	5,544
107	-	715	2,617
	5,322,291	5,486,405	5,739,468
Common Utility Plant			
101	213,076	235,293	235,938
106	170	12,088	5,119
107	12,150	3,303	2,637
	225,397	250,685	243,694
	17,113,864	19,191,282	21,227,315
Accumulated Provisions for Depreciation and Amortization of			
Electric Utility Plant			
108 & 111	(2,797,654)	(2,884,144)	(2,967,663)
108.5	-	-	-
	(2,797,654)	(2,884,144)	(2,967,663)
Gas Utility Plant			
108 & 111	(2,013,796)	(2,088,829)	(2,138,847)
Common Utility Plant			
108 & 111	(71,010)	(88,038)	(96,208)
	(4,882,460)	(5,061,011)	(5,202,719)
	12,231,403	14,130,271	16,024,597
Nuclear Fuel			
120.1	-	-	-
120.2	-	-	-
120.3	-	-	-
120.4	-	-	-
Accumulated Provisions for Amortization			
120.5	-	-	-
	-	-	-
	12,231,403	14,130,271	16,024,597
Other Property and Investments			
121	2,857	2,857	2,857
122	(492)	(519)	(546)
123 & 123.1	55,281	54,864	54,650
124	341,574	354,609	343,061
125-8	61,302	354,186	53,193
175	61,868	68,526	8,346
	522,390	834,524	461,560

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**

**BALANCE SHEET**

		<u>Dec 31, 2012</u>	<u>Dec 31, 2013</u>	<u>Dec 31, 2014</u>
Current and Accrued Assets				
131	Cash	\$ 50,132	\$ 17,547	\$ 15,089
132-4	Special Deposits	9,488	9,766	814
135	Working Funds	-	-	-
136	Temporary Cash Investments	65,300	0	294,100
141-3	Notes and Accounts Receivable	835,902	884,867	918,570
144	Accumulated Provision for Uncollectible Accounts - Credit	(56,219)	(55,521)	(51,602)
145-6	Receivables from Associated Companies	359,047	247,449	374,505
151-5	Materials and Supplies (incl. 163)	114,348	115,634	132,440
158	Allowances	-	-	-
164	Gas Stored Underground - Current	-	-	-
165	Prepayments	28,750	24,102	41,801
171	Interest and Dividends Receivable	49,601	49,585	69
172	Rents Receivable	2,909	2,446	2,433
173	Accrued Utility Revenues	314,276	299,755	284,493
174	Miscellaneous Current and Accrued	14,679	2,236	4,128
175	Current Portion of Derivative Instrument Assets	4,631	25,074	18,448
	Total Current and Accrued Assets	1,792,843	1,622,941	2,035,289
Deferred Debits				
181	Unamortized Debt Expense	22,817	31,199	37,198
182	Unrec'd Plt and Reg Costs and Other Reg Assets	4,319,601	3,019,397	3,527,373
183	Preliminary Survey and Investigation Charges	2,701	5,565	6,390
184	Clearing Accounts	414	421	422
185	Temporary Facilities	-	-	-
186	Miscellaneous Deferred Debits	43,939	42,530	46,940
188	Research and Development Expenditures	-	-	-
189	Unamortized Loss on Reacquired Debt	89,094	81,364	74,029
190	Accumulated Deferred Income Taxes	418,321	424,787	257,141
	Total Deferred Debits	4,896,886	3,605,263	3,949,492
	Total Assets and Other Debits	<u>\$ 19,443,523</u>	<u>\$ 20,192,998</u>	<u>\$ 22,470,937</u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

BALANCE SHEET

		<u>Dec 31, 2012</u>	<u>Dec 31, 2013</u>	<u>Dec 31, 2014</u>
Liabilities and Other Credits				
Proprietary Capital				
201	Common Stock Issued	\$ 892,260	\$ 892,260	\$ 892,260
204	Preferred Stock Issued	-	-	-
207	Premium on Capital Stock	-	-	-
208	Donations from Stockholders	1,405,937	1,505,937	1,680,937
210	Gain on Resale or Cancellation of Required Capital Stock	-	-	-
211	Miscellaneous Paid-In Capital	-	-	-
215	Appropriated Retained Earnings	-	-	-
216	Unappropriated Retained Earnings	2,877,693	3,517,497	4,257,280
216.1	Unappropriated Undistributed Subsidiary Earnings	3,454	3,537	3,323
219	Other Comprehensive Income	1,815	1,083	1,733
	Total Proprietary Capital	5,181,160	5,920,316	6,835,533
Long-Term Debt				
221	221 Bonds	4,804,626	5,579,626	6,329,626
223	223 Advances from Assoc. Co.	-	-	-
225	225 Unamortized Premium on Long-Term Debt	-	-	-
226	226 Unamortized Discount on Long-Term Debt	(10,239)	(13,463)	(17,251)
	Total Long-Term Debt	4,794,387	5,566,163	6,312,375
Other Non-Current Liabilities				
227-9	Other Non-current Liabilities	1,494,900	886,061	1,160,514
244	Long-Term Portion of Derivative Instrument Liabilities	107,238	-	-
230	Asset Retirement Obligation	250,089	273,755	290,180
	Total Other Non-Current Liabilities	1,852,227	1,159,815	1,450,694
Current and Accrued Liabilities				
231	Notes Payable	263,329	59,999	-
232	Accounts Payable	629,751	535,587	573,663
233-4	Payables to Associated Companies	426,502	441,358	499,233
235	Customer Deposits	96,164	95,653	97,615
236	Taxes Accrued	4,497	10,834	7,405
237	Interest Accrued	64,097	71,777	82,236
238	Dividends Declared	-	-	-
239	Matured Long-Term Debt	-	-	-
241	Tax Collections Payable	1,466	215	(65)
242	Miscellaneous Current and Accrued Liabilities	417,155	388,358	462,903
243	Obligations Under Capital leases	-	-	-
244	Current Portion of Derivative Instrument Liabilities	-	-	-
	Total Current and Accrued Liabilities	1,902,962	1,603,781	1,722,990
Deferred Credits				
252	Customer Advances for Construction	21,214	30,642	45,981
253	Other Deferred Credits	549,604	507,974	452,420
254	Other Regulatory Liabilities	358,842	413,883	490,279
255	Accumulated Deferred Investment Tax Credits	144,183	143,581	149,047
281-3	Accumulated Deferred Income Taxes	4,638,944	4,846,845	5,011,618
	Total Deferred Credits	5,712,787	5,942,924	6,149,345
	Total Liabilities and Other Credits	\$ 19,443,523	\$ 20,192,998	\$ 22,470,937

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY****INCOME ACCOUNT**

	<u>YTD 2014 *</u>	<u>Year 2013 *</u>	<u>Year 2012 *</u> (\$000)
400 Electric Operating Revenues	3,659,792	3,722,967	3,940,050
Electric Operating Expenses:			
401 Operation Expense	2,570,858	2,596,028	2,895,058
402 Maintenance Expense	127,740	117,428	72,909
403 Depreciation Expense	214,054	206,293	191,788
404 Amortization of Limited Term Plant	6,181	5,413	4,974
407 Amortization of Property Losses	176,679	210,247	182,013
408.1 Taxes Other Than Income Taxes	23,107	68,337	90,571
409.1 Income Taxes - Federal	262,638	203,144	(12,928)
410.1 Provision for Deferred Income Taxes	545,759	328,021	333,358
411.1 Provision for Deferred Income Taxes - Credit	(656,752)	(381,161)	(196,654)
411.103 Accretion Expense-Electric	21	(308)	365
411.4 Investment Tax Credit Adjustments (Net)	<u>7,368</u>	<u>1,320</u>	<u>19,338</u>
Total Electric Utility Operating Expenses	<u>3,277,654</u>	<u>3,354,762</u>	<u>3,580,792</u>
Electric Utility Operating Income	<u>\$ 382,138</u>	<u>\$ 368,205</u>	<u>\$ 359,258</u>

\* Electric Distribution only

	<u>YTD 2014</u>	<u>Year 2013</u>	<u>Year 2012</u> (\$000)
400 Gas Operating Revenues	1,963,694	1,929,701	1,885,299
Gas Operating Expenses:			
401 Operation Expense	1,423,118	1,432,515	1,392,100
402 Maintenance Expense	36,596	32,188	30,453
403 Depreciation Expense	107,390	105,520	103,507
404 Amortization of Limited Term Plant	5,305	4,422	4,056
407 Amortization of Property Losses	27,921	27,138	26,897
407.4 Amortization of Excess cost of removal	(13,200)	(28,307)	0
408.1 Taxes Other Than Income Taxes	19,565	41,251	47,591
409.1 Income Taxes - Federal	28,518	46,574	(68,514)
410.1 Provision for Deferred Income Taxes	230,766	203,554	178,030
411.1 Provision for Deferred Income Taxes - Cr	(143,553)	(150,062)	(42,248)
411.4 Investment Tax Credit Adjustments (Net)	(1,320)	(1,339)	(1,346)
Total Gas Utility Operating Expenses	<u>1,721,106</u>	<u>1,713,453</u>	<u>1,670,528</u>
Gas Utility Operating Income	<u>\$ 242,588</u>	<u>\$ 216,249</u>	<u>\$ 214,771</u>
Net Utility Operating Income	<u>\$ 624,726</u>	<u>\$ 584,453</u>	<u>\$ 574,029</u>

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**

**BALANCE SHEET**  
**\$ (In Thousands)**

**Dec 31, 2014**

Assets and Other Debits

Utility Plant

Electric Utility Plant

101	Electric Utility Plant in Service	\$	12,091,893
103	Electric Experimental Plant Unclassified		-
105	Electric Utility Plant Held for Future Use		15,473
106	Electric Completed Construction not classified- Electric		1,839,081
107	Electric Construction Work in Progress		1,297,706
	Total Electric Utility Plant		<u>15,244,153</u>

Gas Utility Plant

101	Gas Utility Plant in Service		5,731,303
103	Gas Experimental Plant Unclassified		-
105	Gas Utility Plant Held for Future Use		4
106	Gas Completed Construction not classified		5,544
107	Gas Construction Work in Progress		2,617
	Total Gas Utility Plant		<u>5,739,468</u>

Common Utility Plant

101	Common Utility Plant in Service		235,938
106	Common Completed Construction not classified		5,119
107	Common Construction Work in Progress		2,637
	Total Common Utility Plant		<u>243,694</u>

Total Utility Plant 21,227,315

Accumulated Provisions for Depreciation and Amortization of Electric Utility Plant

108 & 111	Electric Utility Plant in Service		(2,967,663)
108.5	Electric Utility Plant Held for Future Use		-
	Total Electric Utility Plant		<u>(2,967,663)</u>

Gas Utility Plant

108 & 111	Gas Utility Plant in Service		(2,138,847)
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Common Utility Plant

108 & 111	Common Utility Plant in Service		(96,208)
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Total Accumulated Provisions for Depreciation and Amortization of Utility Plant (5,202,719)  
Net Utility Plant Excluding Nuclear Fuel 16,024,597

Nuclear Fuel

120.1	120.1	In Process	-
120.2	120.2	Materials and Assemblies Stock	-
120.3	120.3	In Reactor	-
120.4	120.4	Spent	-

Accumulated Provisions for Amortization

120.5	120.5	Nuclear Fuel	-
		Net Nuclear Fuel	-
		Net Utility Plant	<u>16,024,597</u>

Other Property and Investments

121	Nonutility Property		2,857
122	Accumulated Provision for Depreciation & Amortization of Nonutility Property		(546)
123 & 123.1	Investments in Associated & Subsidiary Companies		54,650
124	Other Investments		343,061
125-8	Special Funds		53,193
175	Long-Term Portion of Derivative Assets		8,346
	Total Other Property and Investments		<u>461,560</u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

BALANCE SHEET

Dec 31, 2014

Current and Accrued Assets		
131	Cash	\$ 15,089
132-4	Special Deposits	814
135	Working Funds	-
136	Temporary Cash Investments	294,100
141-3	Notes and Accounts Receivable	918,570
144	Accumulated Provision for Uncollectible Accounts - Credit	(51,602)
145-6	Receivables from Associated Companies	374,505
151-5	Materials and Supplies (incl. 163)	132,440
158	Allowances	-
164	Gas Stored Underground - Current	-
165	Prepayments	41,801
171	Interest and Dividends Receivable	69
172	Rents Receivable	2,433
173	Accrued Utility Revenues	284,493
174	Miscellaneous Current and Accrued	4,128
175	Current Portion of Derivative Instrument Assets	18,448
	Total Current and Accrued Assets	2,035,289
Deferred Debits		
181	Unamortized Debt Expense	37,198
182	Unrec'd Plt and Reg Costs and Other Reg Assets	3,527,373
183	Preliminary Survey and Investigation Charges	6,390
184	Clearing Accounts	422
185	Temporary Facilities	-
186	Miscellaneous Deferred Debits	46,940
188	Research and Development Expenditures	-
189	Unamortized Loss on Reacquired Debt	74,029
190	Accumulated Deferred Income Taxes	257,141
	Total Deferred Debits	<u>3,949,492</u>
	Total Assets and Other Debits	<u>\$ 22,470,937</u>

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**

**BALANCE SHEET**

Dec 31, 2014

Liabilities and Other Credits		
Proprietary Capital		
201	Common Stock Issued	\$ 892,260
204	Preferred Stock Issued	-
207	Premium on Capital Stock	-
208	Donations from Stockholders	1,680,937
210	Gain on Resale or Cancellation of Required Capital Stock	-
211	Miscellaneous Paid-In Capital	-
215	Appropriated Retained Earnings	-
216	Unappropriated Retained Earnings	4,257,280
216.1	Unappropriated Undistributed Subsidiary Earnings	3,323
219	Other Comprehensive Income	1,733
	Total Proprietary Capital	<u>6,835,533</u>
Long-Term Debt		
221	221 Bonds	6,329,626
223	223 Advances from Assoc. Co.	-
225	225 Unamortized Premium on Long-Term Debt	-
226	226 Unamortized Discount on Long-Term Debt	(17,251)
	Total Long-Term Debt	<u>6,312,375</u>
Other Non-Current Liabilities		
227-9	Other Non-current Liabilities	1,160,514
244	Long-Term Portion of Derivative Instrument Liabilities	-
230	Asset Retirement Obligation	290,180
	Total Other Non-Current Liabilities	<u>1,450,694</u>
Current and Accrued Liabilities		
231	Notes Payable	-
232	Accounts Payable	573,663
233-4	Payables to Associated Companies	499,233
235	Customer Deposits	97,615
236	Taxes Accrued	7,405
237	Interest Accrued	82,236
238	Dividends Declared	-
239	Matured Long-Term Debt	-
241	Tax Collections Payable	(65)
242	Miscellaneous Current and Accrued Liabilities	462,903
243	Obligations Under Capital leases	-
244	Current Portion of Derivative Instrument Liabilities	-
	Total Current and Accrued Liabilities	<u>1,722,990</u>
Deferred Credits		
252	Customer Advances for Construction	45,981
253	Other Deferred Credits	452,420
254	Other Regulatory Liabilities	490,279
255	Accumulated Deferred Investment Tax Credits	149,047
281-3	Accumulated Deferred Income Taxes	5,011,618
	Total Deferred Credits	<u>6,149,345</u>
	Total Liabilities and Other Credits	<u>\$ 22,470,937</u>
		-

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**

**ELECTRIC REVENUE BY CLASS OF BUSINESS  
12 MONTHS ENDING DECEMBER 31, 2014**

(Thousands)

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Residential	\$1,963,109
Commercial	\$1,656,804
Industrial	\$203,458
Public Street & Highway Lighting	\$66,343
Interdepartmental Revenues	\$1,440
Sales for Resale	\$105,903
Forfeited Discounts	\$4,384
Miscellaneous Service Revenues	\$4,259
Rent from Electric Property	\$3,359 *
Other Electric Revenues	<u>\$3,085 *</u>
Total Revenue from Electric Distribution Sales	\$4,012,145

\*Excludes Transmission

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**

**GAS REVENUE BY CLASS OF BUSINESS  
12 MONTHS ENDING DECEMBER 31, 2014**

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(Thousands)

Residential	\$1,167,604
Commercial	\$643,947
Industrial	\$69,598
Street & Yard Light Service	\$551
Cogeneration	\$18,840
Contract Service Gas	\$9,288
Interdepartmental Revenues	\$666
Forfeited Discounts	\$1,615
Miscellaneous Service Revenues	\$47,260
Other Gas Revenues	<u>\$4,324</u>
Total Revenue from Gas Distribution Sales	\$1,963,694

**Public Service Electric & Gas Company**  
**Total Utility Payments or Accruals to Affiliates**  
**(\$ THOUSANDS) Net Billing**

	<b>2014</b>	<b>2013</b>	<b>2012</b>
PSEG Services	\$ 544,640	\$ 581,521	\$ 510,821
PSEG Power	1,753,378	1,795,217	1,793,823
PSEG Long Island	(2,776)	(2,369)	-
PSEG Energy Holdings	(291)	(221)	(130)
PSEG Enterprise	(154,043)	(132,809)	(72,324)
Total Payments to Affiliates	<u>\$ 2,140,908</u>	<u>\$ 2,241,339</u>	<u>\$ 2,232,189</u>

State of New Jersey  
New Jersey Board of Public Utilities

IN THE MATTER OF THE PETITION OF )  
PUBLIC SERVICE ELECTRIC AND GAS )  
COMPANY FOR APPROVAL OF A SECOND )  
EXTENSION OF A SOLAR GENERATION )  
INVESTMENT PROGRAM AND 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, )  
N.J.S.A. 48:2-21.1, AND N.J.S.A. 48:3-98.1 )

BPU Docket No. \_\_\_\_\_

Direct Testimony

of

**Paul R. Moul**

Managing Consultant, P. Moul & Associates

On Behalf of

Public Service Electric and Gas Company

March 4, 2016\*

\*This testimony and accompanying Exhibits were prepared in anticipation of a March 4, 2016 filing date.

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**PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DIRECT TESTIMONY  
OF  
PAUL R. MOUL, MANAGING CONSULTANT  
P. MOUL & ASSOCIATES**

**INTRODUCTION**

1

2 **Q. Please state your name, occupation and business address.**

3 A. My name is Paul Ronald Moul. My business address is 251 Hopkins Road,  
4 Haddonfield, NJ 08033-3062. I am Managing Consultant at the firm P. Moul &  
5 Associates, an independent financial and regulatory consulting firm. My educational  
6 background, business experience and qualifications are provided in Appendix A,  
7 which follows my direct testimony.

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

9 A. Public Service Electric and Gas Company (PSE&G or the Company) has requested  
10 that I provide an independent analysis of the cost of equity for its Solar 4 All<sup>®</sup>  
11 Extension II Program (Extension II or the Program) filing with the Board of Public  
12 Utilities (the Board).

13 **Q. Have you prepared an exhibit to accompany your testimony?**

14 A. Yes. Exhibit PRM-1 is a multi-page document that is divided into ten (10) schedules.  
15 Exhibit PRM-1 was prepared by me to accompany my direct testimony.

16 **SOLAR 4 ALL EXTENSION II**

17 **Q. How have you measured the cost of equity in this docket related to the Extension**  
18 **II filing by PSE&G?**

19 A. As I understand the Company's filing, the costs associated with the filing will be  
20 recovered in rates through a tracking mechanism. I have measured the cost of equity  
21 for this cost recovery mechanism by analyzing an electric proxy group consisting of

1 companies that are contained in the eastern region of the U.S. as defined by The  
2 Value Line Investment Survey (Value Line). The results obtained from the standard  
3 models of the cost of equity applied with data from the proxy group reflect the returns  
4 that investors expect for those companies in their entirety, taking into account all of  
5 their risks.

6 **Q. What is the appropriate return on equity to apply to the Extension II**  
7 **investments?**

8 A. As I will discuss below, my independent analysis of the Company's cost of equity  
9 shows that an 11.00% return would be reasonable for all its investments – for both  
10 Program expenditures and general base rates. The Company has actually prepared its  
11 solar filing using a 9.75% rate of return on common equity (ROE), consistent with the  
12 ROE applied to the Company's recently approved infrastructure programs. However,  
13 in other proceedings before the Board PSE&G has submitted evidence that supports a  
14 return on equity near the top of the range of reasonableness in recognition of the  
15 Company's outstanding management performance and alignment with NJ's energy  
16 policy goals.

17 **ANALYSIS OF THE COST OF EQUITY**

18 **Q. Please describe the process you employed to determine the cost of equity for**  
19 **PSE&G in this case.**

20 A. No one method or model of the cost of equity can be applied in an isolated manner.  
21 Rather, informed judgment must be used to take into consideration all factors that  
22 influence investor required returns. Consistent with my approach in the past, and  
23 with approaches that have been presented before the Board, I have used more than

1 one method to measure the Company's cost of equity. As I describe below, each of  
2 the methods used to measure the cost of equity contain certain incomplete and/or  
3 overly restrictive assumptions and constraints that are not optimal. Therefore, I favor  
4 considering the results from a variety of methods. As noted previously, I have  
5 measured the cost of equity with proxy group data because the stock of PSE&G is not  
6 traded. With the proxy group data that I describe below, I arrived at a cost of equity  
7 of 11.00% for PSE&G in this case.

8 **Q. How have you conducted your analysis to determine the appropriate cost of**  
9 **equity for the purpose of the Company's Extension II filing?**

10 A. My independent analysis of the cost of equity employed four widely recognized  
11 models. These methods are: the Discounted Cash Flow ("DCF") model, the Risk  
12 Premium ("RP") analysis, the Capital Asset Pricing Model ("CAPM"), and the  
13 Comparable Earnings ("CE") approach.

14 **Q. What criteria did you employ to assemble your proxy group?**

15 A. The companies that comprise my proxy group have the following common  
16 characteristics: (i) their stock is traded on the New York Stock Exchange, (ii) they are  
17 listed in the "Electric Utility (East)" section of Value Line, (iii) they have not recently  
18 reduced their common dividend, and (iv) they are not currently the target of a  
19 publicly announced merger or acquisition. Value Line is an investment advisory  
20 service that is a widely used source in public utility rate cases. The identities of the  
21 companies are: Consolidated Edison, Inc., Dominion Resources, Inc., Duke Energy  
22 Corp., Eversource Energy, FirstEnergy Corp., NextEra Energy, PPL Corporation,

1 Public Service Enterprise Group, SCANA Corp., and Southern Company. I refer to  
2 these companies as the “Electric Group” throughout my testimony. I eliminated one  
3 company from the Electric Group. That exclusion was Exelon. This elimination was  
4 based on the fact that for Exelon, 52% of its assets are represented by merchant  
5 generation. In the future, Exelon may become a candidate for the proxy group if its  
6 proposed acquisition of PEPCO Holdings is completed. At that point, regulated  
7 operations will dominate Exelon, and it too would qualify for the proxy group. All  
8 members of my proxy group have less than 50% of their asset associated with non-  
9 regulated investments. On average, the Electric Group has approximately 75% of  
10 their assets regulated.

11 **Q. Please summarize the results of models that you used to measure the cost of**  
12 **equity.**

13 A. The summary results of the cost of equity analysis are contained in Schedule 01 of  
14 Exhibit PRM-1, and the supporting data for each component of the models is  
15 contained in Schedules 02 through 10 that follow. Footnotes on Schedule 01 provide  
16 references to the remaining schedules in Exhibit PRM-1. Several well recognized  
17 procedures have been employed to implement each model. For the DCF model, I  
18 have used six-month average dividend yields. I have also used DCF growth rates that  
19 reflect investor growth expectations for the proxy group that I have employed. I have  
20 applied an adjustment to recognize the change in leverage between the market-  
21 determined capitalization and the book value capital structure that is used in the rate-  
22 setting process. Flotation costs have also been added to the market models. In the  
23 case of the RP analysis, I used a forward-looking yield on public utility bonds and an

1 equity risk premium that is aligned with the current and expected yield of a corporate  
2 bond. That is to say, the equity risk premium that I develop is aligned with the  
3 prospective level of interest rates that I employ. I have incorporated into my RP  
4 analysis the proposition that the equity risk premium increases as interest rates  
5 decline, and the premium declines as interest rates increase. The empirical data that I  
6 present in this case supports this proposition. For the CAPM, I used the forecasted  
7 yield on long-term (i.e., 30-year) Treasury bonds as a proxy for the risk-free rate of  
8 return, the leverage adjusted beta for the proxy groups, and a market premium that  
9 was measured using a combination of historical data and forecasts obtained from  
10 Value Line and a DCF calculation for the S&P 500 Composite index. Finally,  
11 Comparable Earnings was considered using both historical achieved and forecast  
12 returns for a group of non-regulated companies that have risk characteristics  
13 comparable to the Electric Group.

14 Based upon the results of the models presented on Schedule 01, the indicated  
15 costs of equity are summarized below.

	Electric Group	
	Excluding Flotation	Including Flotation
DCF	10.53%	10.69%
RP	11.50%	11.66%
CAPM	9.99%	10.15%
CE	11.05%	11.05%

1 The measures of central tendency indicate that the average of the results is 10.89%,  
2 the median is 10.87% and the midpoint is 10.91%, when recognizing flotation cost.  
3 Each measure of central tendency is 8 to 16 basis points lower without flotation costs.  
4 Focusing on just the DCF and Risk Premium models, the results are 11.02%  
5 excluding flotation costs and 11.18% including flotation costs. As such, a cost of  
6 equity of 11.00% is reasonable in this case, particularly in light of the ROE premium  
7 that would be appropriate in light of PSE&G's history of management excellence and  
8 alignment with New Jersey energy policies, as reflected in this filing and the  
9 Company's numerous other infrastructure, renewables and energy efficiency  
10 initiatives. This return would fulfill the established standards of a fair rate of return  
11 established by the landmark Bluefield and Hope cases.<sup>1</sup>

### 12 **DISCOUNTED CASH FLOW**

- 13 **Q. Please describe your use of the Discounted Cash Flow approach to determine the**  
14 **cost of equity.**
- 15 A. The DCF model seeks to explain the value of an asset as the present value of future  
16 expected cash flows discounted at the appropriate risk-adjusted rate of return. In its  
17 simplest form, the DCF return on common stock consists of a current cash (dividend)  
18 yield and future price appreciation (growth) of the investment. The dividend discount  
19 equation is the familiar DCF valuation model and assumes future dividends are  
20 systematically related to one another by a constant growth rate. The DCF formula is  
21 derived from the standard valuation model:  $P = D/(k-g)$ , where P = price, D =

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<sup>1</sup> Bluefield Water Works & Improvement Co. v. P.S.C. of West Virginia, 262 U.S. 679 (1923) and F.P.C. v. Hope Natural Gas Co., 320 U.S. 591 (1944).

1 dividend,  $k$  = the cost of equity, and  $g$  = growth in cash flows. By rearranging the  
2 terms, we obtain the familiar DCF equation:  $k = D/P + g$ . All of the terms in the DCF  
3 equation represent investors' assessment of expected future cash flows that they will  
4 receive in relation to the value that they set for a share of stock ( $P$ ). The DCF  
5 equation is sometimes referred to as the "Gordon" model.<sup>2</sup> My DCF results are  
6 provided on Schedule 01 for the Electric Group. The DCF return is 10.53%  
7 excluding flotation costs and 10.69% including flotation costs.

8 Among other limitations of the model, there is a certain element of circularity  
9 in the DCF method when applied in rate cases. This is because investors'  
10 expectations for the future depend upon regulatory decisions. In turn, when  
11 regulators depend upon the DCF model to set the cost of equity, they rely upon  
12 investor expectations that include an assessment of how regulators will decide rate  
13 cases. Due to this circularity, the DCF model may not fully reflect the true risk of a  
14 utility.

15 **Q. Please explain the dividend yield component of a DCF analysis.**

16 A. The DCF methodology requires the use of an expected dividend yield to establish the  
17 investor-required cost of equity. For the twelve months ended December 2015, the  
18 monthly dividend yields are shown on Schedule 02 and reflect an adjustment to the  
19 month-end prices to reflect the buildup of the dividend in the price that has occurred  
20 since the last ex-dividend date (i.e., the date by which a shareholder must own the

---

<sup>2</sup> Although the popular application of the DCF model is often attributed to the work of Myron J. Gordon in the mid-1950's, J. B. Williams expounded the DCF model in its present form nearly two decades earlier.

1 shares to be entitled to the dividend payment – usually about two to three weeks prior  
2 to the actual payment).

3 For the twelve months ended December 2015, the average dividend yield was  
4 4.00% for the Electric Group based upon a calculation using annualized dividend  
5 payments and adjusted month-end stock prices. The dividend yields for the more  
6 recent six- and three-month periods were 4.06% and 4.04%, respectively. I have  
7 used, for the purpose of the DCF model, the six-month average dividend yield of  
8 4.06% for the Electric Group. The use of this dividend yield will reflect current  
9 capital costs, while avoiding spot yields. For the purpose of a DCF calculation, the  
10 average dividend yield must be adjusted to reflect the prospective nature of the  
11 dividend payments, i.e., the higher expected dividends for the future. Recall that the  
12 DCF is an expectational model that must reflect investor anticipated cash flows for  
13 the Electric Group. I have adjusted the six-month average dividend yield in three  
14 different, but generally accepted, manners and used the average of the three adjusted  
15 values as calculated in the lower panel of data presented on Schedule 02. This  
16 adjustment adds twelve basis points to the six-month average historical yield, thus  
17 producing the 4.18% adjusted dividend yield for the Electric Group.

18 **Q. Please explain the underlying factors that influence investor's growth**  
19 **expectations.**

20 A. As noted previously, investors are interested principally in the future growth of their  
21 investment (i.e., the price per share of the stock). Future earnings per share growth  
22 represent the DCF model's primary focus because under the constant price-earnings  
23 multiple assumption of the model, the price per share of stock will grow at the same

1 rate as earnings per share. In conducting a growth rate analysis, a wide variety of  
2 variables can be considered when reaching a consensus of prospective growth,  
3 including: earnings, dividends, book value, and cash flow stated on a per share basis.  
4 Historical values for these variables can be considered, as well as analysts' forecasts  
5 that are widely available to investors. A fundamental growth rate analysis is  
6 sometimes represented by the internal growth (" $b \times r$ "), where " $r$ " represents the  
7 expected rate of return on common equity and " $b$ " is the retention rate that consists of  
8 the fraction of earnings that are not paid out as dividends. To be complete, the  
9 internal growth rate should be modified to account for sales of new common stock --  
10 this is called external growth (" $s \times v$ "), where " $s$ " represents the new common shares  
11 expected to be issued by a firm and " $v$ " represents the value that accrues to existing  
12 shareholders from selling stock at a price different from book value. Fundamental  
13 growth, which combines internal and external growth, provides an explanation of the  
14 factors that cause book value per share to grow over time.

15 Growth also can be expressed in multiple stages. This expression of growth  
16 consists of an initial "growth" stage where a firm enjoys rapidly expanding markets,  
17 high profit margins, and abnormally high growth in earnings per share. Thereafter, a  
18 firm enters a "transition" stage where fewer technological advances and increased  
19 product saturation begin to reduce the growth rate and profit margins come under  
20 pressure. During the "transition" phase, investment opportunities begin to mature,  
21 capital requirements decline, and a firm begins to pay out a larger percentage of  
22 earnings to shareholders. Finally, the mature or "steady-state" stage is reached when

1 a firm's earnings growth, payout ratio, and return on equity stabilizes at levels where  
2 they remain for the life of a firm. The three stages of growth assume a step-down of  
3 high initial growth to lower sustainable growth. Even if these three stages of growth  
4 can be envisioned for a firm, the third "steady-state" growth stage, which is assumed  
5 to remain fixed in perpetuity, represents an unrealistic expectation because the three  
6 stages of growth can be repeated. That is to say, the stages can be repeated where  
7 growth for a firm ramps-up and ramps-down in cycles over time.

8 **Q. Did you assume a non-constant growth rate in your analysis?**

9 A. No. I acknowledge that growth can be expressed in multiple stages, but there is no  
10 need to do so in this case. As my subsequent analysis will reveal, my growth rate  
11 determination provides a constant growth rate that is sustainable given the  
12 fundamentals currently affecting the industry. For example, infrastructure  
13 rehabilitation adds to the growth of rate base that will provide the foundation for  
14 future growth that is consistent with the constant growth rate.

15 **Q. What investor-expected growth rate is appropriate in a DCF calculation?**

16 A. Investors consider both company-specific variables and overall market sentiment  
17 (e.g., level of inflation rates, interest rates, economic conditions) when balancing their  
18 capital gains expectations with their dividend yield requirements. I follow an  
19 approach that is not rigidly formatted because investors are not influenced by a single  
20 set of company-specific variables weighted in a formulaic manner. In my opinion, all  
21 relevant growth rate indicators using a variety of techniques must be evaluated when  
22 formulating a judgment of investor-expected growth.

1 **Q. What company-specific data have you considered in your growth rate analysis?**

2 A. As presented on Schedules 03 and 04, I have considered both historical and projected  
3 growth rates in earnings per share, dividends per share, book value per share, and  
4 cash flow per share for the Electric Group. While analysts will review all measures  
5 of growth as I have done, it is earnings per share growth that influences directly the  
6 expectations of investors for utility stocks.<sup>3</sup> Forecasts of earnings growth are  
7 required within the context of the DCF because the model is a forward-looking  
8 concept, and with a constant price-earnings multiple and payout ratio, all other  
9 measures of growth will mirror earnings growth. So with the assumptions underlying  
10 the DCF, all forward-looking projections should be similar with a constant price-  
11 earnings multiple, earned return, and payout ratio.

12 As to the issue of historical data, investors cannot purchase past earnings of a  
13 utility, rather they are only entitled to future earnings. In addition, assigning  
14 significant weight to historical performance results in double counting of the  
15 historical data. While history cannot be ignored, it is already factored into the  
16 analysts' forecasts of earnings growth. In developing a forecast of future earnings  
17 growth, an analyst would first apprise himself/herself of the historical performance of  
18 a company. Hence, there is no need to count historical growth rates a second time,  
19 because historical performance is already reflected in analysts' forecasts which reflect  
20 an assessment of how the future will diverge from historical performance.

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<sup>3</sup> Gordon, Gordon & Gould, "Choice Among Methods of Estimating Share Yield," The Journal of Portfolio Management (Spring 1989).

1           Schedule 03 shows the historical growth rates in earnings per share, dividends  
2 per share, book value per share, and cash flow per share for the Electric Group. The  
3 historical growth rates were taken from the Value Line publication that provides these  
4 data. As shown on Schedule 3, the historical growth of earnings per share was in the  
5 range of 2.90% to 3.06% for the Electric Group.

6 **Q.    What is presented in Schedule 04?**

7 A.    Schedule 04 provides projected earnings per share growth rates taken from analysts'  
8 forecasts compiled by IBES/First Call, Zacks, Morningstar, SNL, and Value Line.  
9 IBES/First Call, Zacks, Morningstar, and SNL represent reliable authorities of  
10 projected growth upon which investors rely. The IBES/First Call, Zacks, and SNL  
11 growth rates are consensus forecasts taken from a survey of analysts that make  
12 projections of growth for these companies. The IBES/First Call, Zacks, Morningstar,  
13 and SNL estimates are obtained from the Internet and are widely available to  
14 investors. First Call probably is quoted most frequently in the financial press when  
15 reporting on earnings forecasts. The Value Line forecasts also are widely available to  
16 investors and can be obtained by subscription or free-of-charge at most public and  
17 collegiate libraries. The IBES/First Call, Zacks, Morningstar, and SNL forecasts are  
18 limited to earnings per share growth, while Value Line makes projections of other  
19 financial variables. The Value Line forecasts of dividends per share, book value per  
20 share, and cash flow per share have also been included on Schedule 04 for the  
21 Electric Group.

1 **Q. Is a five-year investment horizon associated with the analysts' forecasts**  
2 **consistent with the traditional DCF model?**

3 A. Yes. In fact, it illustrates that the infinite form of the DCF model contains an  
4 unrealistic assumption. Rather than viewing the DCF in the context of an endless  
5 stream of growing dividends (e.g., a century of cash flows), the growth in the share  
6 value (i.e., capital appreciation, or capital gains yield) is most relevant to investors'  
7 total return expectations. Hence, the sale price of a stock can be viewed as a  
8 liquidating dividend that can be discounted along with the annual dividend receipts  
9 during the investment-holding period to arrive at the investor expected return. The  
10 growth in the price per share will equal the growth in earnings per share absent any  
11 change in price-earnings ("P-E") multiple -- a necessary assumption of the DCF. As  
12 such, my company-specific growth analysis, which focuses principally upon five-year  
13 forecasts of earnings per share growth, conforms with the type of analysis that  
14 influences the actual total return expectation of investors. Moreover, academic  
15 research focuses on five-year growth rates as they influence stock prices. Indeed, if  
16 investors really required forecasts which extended beyond five years in order to  
17 properly value common stocks, then I am sure that some investment advisory service  
18 would begin publishing that information for individual stocks in order to meet the  
19 demands of investors. The absence of such a publication is proof that investors do  
20 not require infinite forecasts in order to purchase and sell stocks in the marketplace.

21 **Q. What does Schedule 04 show as the projected growth rates?**

22 A. As to the five-year forecast growth rates, Schedule 04 indicates that the projected  
23 earnings per share growth rates for the Electric Group are 4.30% by IBES/First Call,

1 4.83% by Zacks, 5.07% by Morningstar, 4.36% by SNL, and 5.89% by Value Line.  
2 The Value Line projections indicate that earnings per share for the Electric Group  
3 will grow prospectively at a more rapid rate (i.e., 5.89%) than the dividends per share  
4 (i.e., 4.83%), which translates into a declining dividend payout ratio for the future.  
5 As noted earlier, with the constant price-earnings multiple assumption of the DCF  
6 model, growth for these companies will occur at the higher earnings per share growth  
7 rate, thus producing the capital gains yield expected by investors.

8 **Q. What conclusion have you drawn from these data regarding the applicable**  
9 **growth rate to be used in the DCF model?**

10 A. A variety of factors should be examined to reach a conclusion on the DCF growth  
11 rate. However, certain growth rate variables should be emphasized when reaching a  
12 conclusion on an appropriate growth rate. From the various alternative measures of  
13 growth identified above, earnings per share should receive greatest emphasis.  
14 Earnings per share growth are the primary determinant of investors' expectations  
15 regarding their total returns in the stock market. This is because the capital gains  
16 yield (i.e., price appreciation) will track earnings growth with a constant price  
17 earnings multiple (a key assumption of the DCF model). Moreover, earnings per  
18 share (derived from net income) are the source of dividend payments and are the  
19 primary driver of retention growth and its surrogate, i.e., book value per share growth.  
20 Under these circumstances, greater emphasis must be placed upon projected earnings  
21 per share growth. In this regard, it is worthwhile to note that Professor Myron  
22 Gordon, the foremost proponent of the DCF model in rate cases, concluded that the

1 best measure of growth in the DCF model is a forecast of earnings per share growth.<sup>4</sup>  
2 Hence, to follow Professor Gordon's findings, projections of earnings per share  
3 growth, such as those published by IBES/First Call, Zacks, Morningstar, and Value  
4 Line, represent a reasonable assessment of investor expectations.

5 The forecasts of earnings per share growth, as shown on Schedule 04, provide  
6 a range of average growth rates of 4.30% to 5.89%. Although the DCF growth rates  
7 cannot be established solely with a mathematical formulation, it is my opinion that an  
8 investor-expected growth rate of 5.25% is a reasonable estimate of investor expected  
9 growth within the array of earnings per share growth rates shown by the analysts'  
10 forecasts. As I indicated above, the fundamentals for PSE&G, including its  
11 significant new investment in infrastructure rehabilitation and asset hardening, point  
12 to a higher growth rate. In connection with its earnings release of February 19, 2016,  
13 Public Service Enterprise Group revealed that \$8.3 billion (or 72%) of its \$11.5  
14 billion CapEx plan through 2018 will be allocated to its regulated utility business.  
15 This shows the commitment to growing the regulated side of its business.

16 **Q. Are the dividend yield and growth components of the DCF adequate to explain**  
17 **the rate of return on common equity when it is used in the calculation of the**  
18 **weighted average cost of capital?**

19 A. Only if the capital structure ratios are measured with the market value of debt and  
20 equity. In the case of the Electric Group, those average capital structure ratios are  
21 41.34% long-term debt, 0.25% preferred stock, and 58.42% common equity, as

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<sup>4</sup> Gordon, Gordon & Gould, "Choice Among Methods of Estimating Share Yield," The Journal of Portfolio Management (Spring 1989).

1 shown on Schedule 05. If book values are used to compute the capital structure  
2 ratios, then an adjustment is required.

3 **Q. Please explain why.**

4 A. If regulators use the results of the DCF (which are based on the market price of the  
5 stock of the companies analyzed) to compute the weighted average cost of capital  
6 with a book value capital structure used for ratesetting purposes, those results will not  
7 reflect the higher level of financial risk associated with the book value capital  
8 structure. Where, as here, a stock's market price diverges from a utility's book value,  
9 the potential exists for a financial risk difference, because the capitalization of a  
10 utility measured at its market value contains more equity, less debt and therefore less  
11 risk than the capitalization measured at its book value. I will describe this difference  
12 in financial leverage adjustment below that reveals that a 58.42% market-value based  
13 common equity ratio has lower financial risk than the 45.52% book value based  
14 common equity ratio.

15 This shortcoming of the DCF has persuaded the Pennsylvania Public Utility  
16 Commission (PPUC) to adjust the cost of equity upward to make the return consistent  
17 with the book value capital structure. Provisions for this risk difference were made  
18 by the PPUC in the following cases:

Date	Company	Docket Number	Basis Points
January 10, 2002	Pennsylvania-American Water Co.	Docket No. R-00016339	60 basis points
August 1, 2002	Philadelphia Suburban Water Co.	Docket No. R-00016750	80 basis points
January 29, 2004	Pennsylvania-American Water Co.	Docket No. R-00038304 (affirmed by the Commonwealth Court on November 8, 2004)	60 basis points
August 5, 2004	Aqua Pennsylvania, Inc.	Docket No. R-00038805	60 basis points
December 22, 2004	PPL Electric Utilities Corp.	Docket No. R-00049255	45 basis points
February 8, 2007	PPL Gas Utilities Corp.	Docket No. R-00061398	70 basis points

1 In order to make the DCF results relevant to the capitalization measured at book value  
2 (as is done for ratesetting purposes) the market-derived cost rate cannot be used  
3 without modification.

4 **Q. Please continue with your discussion of the calculation of the leverage**  
5 **adjustment.**

6 A. The only perspective that is important to investors is the return that they can realize  
7 on the market value of their investment. As I have measured the DCF, the simple  
8 yield (D/P) plus growth (g) provides a return applicable strictly to the price (P) that an  
9 investor is willing to pay for a share of stock. The need for the leverage adjustment  
10 arises when the results of the DCF model (k) are to be applied to a capital structure  
11 that is different than indicated by the market price (P). From the market perspective,  
12 the financial risk of the Electric Group is accurately measured by the capital structure  
13 ratios calculated from the market capitalization of a firm. If the ratesetting process  
14 utilized the market capitalization ratios, then no additional analysis or adjustment  
15 would be required, and the simple yield (D/P) plus growth (g) components of the  
16 DCF would satisfy the financial risk associated with the market value of the equity  
17 capitalization. Because the ratesetting process uses a different set of ratios calculated

1 from the book value capitalization, then further analysis is required to synchronize the  
2 financial risk of the book capitalization with the required return on the book value of  
3 the equity. This adjustment is developed through precise mathematical calculations,  
4 using well recognized analytical procedures that are widely accepted in the financial  
5 literature. To arrive at that return, the rate of return on common equity is the  
6 unleveraged cost of capital (or equity return at 100% equity) plus one or more terms  
7 reflecting the increase in financial risk resulting from the use of leverage in the capital  
8 structure. The calculations presented in the lower panel of data shown on Schedule  
9 05, under the heading "M&M," provides a return of 7.82% when applicable to a  
10 capital structure with 100% common equity.

11 **Q. Are there specific factors that influence market-to-book ratios that determine**  
12 **whether the leverage adjustment should be made?**

13 A. No. The leverage adjustment is not intended, nor was it designed, to address the  
14 reasons that stock prices vary from book value. Hence, any observations concerning  
15 market prices relative to book are not on point. The leverage adjustment deals with  
16 the issue of financial risk and does not transform the DCF result to a book value  
17 return through a market-to-book adjustment. Again, the leverage adjustment that I  
18 propose is based on the fundamental financial precept that the cost of equity is equal  
19 to the rate of return for an unleveraged firm (i.e., where the overall rate of return  
20 equates to the cost of equity with a capital structure that contains 100% equity) plus  
21 the additional return required for introducing debt and/or preferred stock leverage into  
22 the capital structure.

1 Further, as noted previously, the relatively high market prices of utility stocks  
2 cannot be attributed solely to the notion that these companies are expected to earn a  
3 return on equity that differs from their cost of equity. Stock prices above book value  
4 are common for utility stocks, and indeed the stock prices of non-regulated  
5 companies exceed book values by even greater margins. In this regard, according to  
6 the Barron's issue of February 8, 2016, the major market indices' market-to-book  
7 ratios are well above unity. The Dow Jones Utility index traded at a multiple of 1.90  
8 times book value, which is below the market multiple of other indices. For example,  
9 the S&P Industrial index was at 3.39 times book value, and the Dow Jones Industrial  
10 index was at 2.97 times book value. It is difficult to accept that the vast majority of  
11 all firms operating in our economy are generating returns far in excess of their cost of  
12 capital. Certainly, in our free-market economy, competition should contain such  
13 "excesses" if they indeed exist. So there is nothing unique to market prices that  
14 exceed book value for utilities or other companies for that matter. What is indicated  
15 is that market derived equity cost rates are associated with the market capitalization  
16 of all companies, and those costs rates are unassociated with their book values unless  
17 differences in financial leverage are taken into account.

18 Finally, the leverage adjustment adds stability to the final DCF cost rate. That  
19 is to say, as the market capitalization increases relative to its book value, the leverage  
20 adjustment increases while the simple yield (D/P) plus growth (g) result declines.  
21 The reverse is also true that when the market capitalization declines, the leverage  
22 adjustment also declines as the simple yield (D/P) plus growth (g) result increases.

1 **Q. Is the leverage adjustment that you propose designed to transform the market**  
2 **return into one that is designed to produce a particular market-to-book ratio?**

3 A. No, it is not. The adjustment that I label as a “leverage adjustment” is merely a  
4 convenient way of showing the amount that must be added to (or subtracted from) the  
5 result of the simple DCF model (i.e.,  $D/P + g$ ), in the context of a return that applies  
6 to the capital structure used in ratemaking, which is computed with book value  
7 weights rather than market value weights, in order to arrive at the utility’s total cost of  
8 equity. I specify a separate factor, which I call the leverage adjustment, but there is  
9 no need to do so other than providing identification for this factor. If I expressed my  
10 return solely in the context of the book value weights that we use to calculate the  
11 weighted average cost of capital, and ignore the familiar  $D/P + g$  expression entirely,  
12 then there would be no separate element to reflect the financial leverage change from  
13 market value to book value capitalization. As shown in the bottom panel of data on  
14 Schedule 05, the equity return applicable to the book value common equity ratio is  
15 equal to 7.82%, which is the return for the Electric Group applicable to its equity with  
16 no debt in its capital structure (i.e., the cost of capital is equal to the cost of equity  
17 with a 100% equity ratio) plus 2.69% compensation for having a 54.10% debt ratio,  
18 plus 0.02% for having a 0.38% preferred stock ratio. The sum of the parts is 10.53%  
19 (7.82% + 2.69% + 0.02%) and there is no need to even address the cost of equity in  
20 terms of  $D/P + g$ . To express this same return in the context of the familiar DCF  
21 model, I summed the 4.18% dividend yield, the 5.25% growth rate, and the 1.10% for  
22 the leverage adjustment in order to arrive at the same 10.53% (4.18% + 5.25% +  
23 1.10%) return. I know of no means to mathematically solve for the 1.10% leverage

1 adjustment by expressing it in the terms of any particular relationship of market price  
2 to book value. The 1.10% adjustment is merely a convenient way to compare the  
3 10.53% return computed directly with the Modigliani & Miller formulas to the 9.43%  
4 return generated by the DCF model based on a market value capital structure. My  
5 point is that when we use a market-determined cost of equity developed from the  
6 DCF model, it reflects a level of financial risk that is different (in this case, lower)  
7 from the capital structure stated at book value. This process has nothing to do with  
8 targeting any particular market-to-book ratio.

9 **Q. Is there another item that should be included as part of the DCF return?**

10 A. Yes. Flotation costs must be considered because the Company needs to be in a  
11 position to raise additional common equity in order to fulfill its public service  
12 responsibility.

13 **Q. How have you measured the flotation cost allowance for the DCF return?**

14 A. The flotation cost adjustment adds 0.16% (10.69% - 10.53%) to the rate of return on  
15 common equity for the Electric Group as shown by the calculations provided on  
16 Schedule 01. In my opinion, this adjustment is reasonable and supported by the  
17 analysis of electric utility stock issues shown on Schedule 06. On that schedule, I  
18 show that the average underwriters' discount and commission and company issuance  
19 expenses is 3.2% for the twenty-seven issues of electric utility stocks. Since I apply  
20 the flotation cost to the entire DCF result, I have utilized an adjustment factor that is  
21 about one half the flotation costs as indicated on Schedule 06 (i.e.,  $0.032 \div 2 = 0.016$ ,

1 rounded to 0.015). Hence, my flotation cost adjustment factor is 1.015 (i.e., 1.000 +  
2 0.015), which is used on Schedule 01.

3 **Q. Please provide the DCF return based upon your preceding discussion of**  
4 **dividend yield, growth, and leverage.**

5 A. As explained previously, I have utilized a six-month average dividend yield ("D<sub>1</sub>/P<sub>0</sub>")  
6 adjusted in a forward-looking manner for my DCF calculation. This dividend yield is  
7 used in conjunction with the growth rate ("g") previously developed. The DCF also  
8 includes the leverage modification ("lev.") required when the book value equity ratio  
9 is used in determining the weighted average cost of capital in the ratesetting process  
10 rather than the market value equity ratio related to the price of stock. Flotation  
11 ("flot") must also be recognized in the DCF cost rate. The resulting DCF cost rate is:

$$D_1/P_0 + g + lev. = k \times flot. = K$$

Electric Group 4.18% + 5.25% + 1.10% = 10.53% x 1.015 = 10.69%

12 The DCF result shown above represents the simplified (i.e., Gordon) form of the  
13 model that contains a constant growth assumption. I should reiterate, however, that  
14 the DCF-indicated cost rate provides an explanation of the rate of return on common  
15 stock market prices without regard to the prospect of a change in the price-earnings  
16 multiple. An assumption that there will be no change in the price-earnings multiple is  
17 not supported by the realities of the equity market, because price-earnings multiples  
18 do not remain constant. This is one of the constraints of this model that makes it  
19 important to consider other model results when determining a company's cost of  
20 equity.

**RISK PREMIUM ANALYSIS**

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**Q. Please describe your use of the risk premium approach to determine the cost of equity.**

A. With the Risk Premium approach, the cost of equity capital is determined by corporate bond yields plus a premium to account for the fact that common equity is exposed to greater investment risk than debt capital. The result of my Risk Premium study is shown on Schedule 01. That result is 11.50% excluding flotation costs and 11.66% including flotation costs. As with other models used to determine the cost of equity, the Risk Premium approach has its limitations, including potential imprecision in the assessment of the future cost of corporate debt and the measurement of the risk-adjusted common equity premium.

**Q. What long-term public utility debt cost rate did you use in your risk premium analysis?**

A. In my opinion, a 5.00% yield represents a reasonable estimate of the prospective yield on long-term A-rated public utility bonds.

**Q. What historical data is shown by the Moody's data?**

A. I have analyzed the historical yields on the Moody's index of long-term public utility debt as shown on page 1 of Schedule 07. For the twelve months ended December 2015, the average monthly yield on Moody's index of A-rated public utility bonds was 4.12%. For the six and three-month periods ended December 2015, the yields were 4.35% and 4.35%, respectively. During the twelve-months ended December 2015, the range of the yields on A-rated public utility bonds was 3.58% to 4.40%. Based on the forecasts developed below, I show that interest rates will be moving up

1 from the historical measures. Page 2 of Schedule 07 shows the long-run spread in  
2 yields between A-rated public utility bonds and long-term Treasury bonds. As shown  
3 on page 3 of Schedule 07, the yields on A-rated public utility bonds have exceeded  
4 those on Treasury bonds by 1.27% on a twelve-month average basis, 1.39% on a six-  
5 month average basis, and 1.38% on a three-month average basis. From these  
6 averages, 1.25% represents a reasonably conservative spread for the yield on A-rated  
7 public utility bonds over Treasury bonds.

8 **Q. What forecasts of interest rates have you considered in your analysis?**

9 A. I have determined the prospective yield on A-rated public utility debt by using the  
10 Blue Chip Financial Forecasts (“Blue Chip”) along with the spread in the yields that I  
11 describe below. The Blue Chip is a reliable authority and contains consensus  
12 forecasts of a variety of interest rates compiled from a panel of banking, brokerage,  
13 and investment advisory services. In early 1999, Blue Chip stopped publishing  
14 forecasts of yields on A-rated public utility bonds because the Federal Reserve  
15 deleted these yields from its Statistical Release H.15. To independently project a  
16 forecast of the yields on A-rated public utility bonds, I have combined the forecast  
17 yields on long-term Treasury bonds published on January 1, 2016, and a yield spread  
18 of 1.25%, derived from historical data.

19 **Q. How have you used these data to project the yield on A-rated public utility**  
20 **bonds for the purpose of your Risk Premium analyses?**

21 A. Shown below is my calculation of the prospective yield on A-rated public utility  
22 bonds using the building blocks discussed above, i.e., the Blue Chip forecast of

1 Treasury bond yields and the public utility bond yield spread. For comparative  
 2 purposes, I also have shown the Blue Chip forecasts of Aaa-rated and Baa-rated  
 3 corporate bonds. These forecasts are:

Blue Chip Financial Forecasts						
Year	Quarter	Corporate		30-Year	A-rated Public Utility	
		Aaa-rated	Baa-rated	Treasury	Spread	Yield
2016	First	4.1%	5.4%	3.1%	1.25%	4.35%
2016	Second	4.3%	5.6%	3.2%	1.25%	4.45%
2016	Third	4.4%	5.7%	3.4%	1.25%	4.65%
2016	Fourth	4.7%	5.9%	3.5%	1.25%	4.75%
2017	First	4.8%	6.0%	3.7%	1.25%	4.95%
2017	Second	4.9%	6.1%	3.8%	1.25%	5.05%

4 **Q. Are there additional forecasts of interest rates that extend beyond those shown**  
 5 **above?**

6 A. Yes. Twice yearly, Blue Chip provides long-term forecasts of interest rates. In its  
 7 December 1, 2015 publication, Blue Chip published longer-term forecasts of interest  
 8 rates, which were reported to be:

Blue Chip Financial Forecasts			
Averages	Corporate		30-Year
	Aaa-rated	Baa-rated	Treasury
2017-2021	5.6%	6.5%	4.5%
2022-2026	5.8%	6.8%	4.8%

9  
 10 The longer term forecasts by Blue Chip suggest that interest rates will move up from  
 11 the levels revealed by the near term forecasts. By focusing more on the near term  
 12 forecasts, a 5.00% yield on A-rated public utility bonds represents a conservative  
 13 benchmark for measuring the cost of equity in this case.

1 **Q. What equity risk premium have you determined for public utilities?**

2 A. To develop an appropriate equity risk premium, I analyzed the results from Stocks,  
3 Bonds, Bills and Inflation (“SBBI”) 2015 Classic Yearbook published by Ibbotson  
4 Associates that is part of Morningstar. My investigation reveals that the equity risk  
5 premium varies according to the level of interest rates. That is to say, the equity risk  
6 premium increases as interest rates decline and it declines as interest rates increase.  
7 This inverse relationship is revealed by the summary data presented below and shown  
8 on page 1 of Schedule 08.

<b>Common Equity Risk Premiums</b>		
Low Interest Rates		7.36%
Average Across All Interest Rates		5.69%
High Interest Rates		3.98%

9 Based on my analysis of the historical data, the equity risk premium was 7.36% when  
10 the marginal cost of long-term government bonds was low (i.e., 3.00%, which was the  
11 average yield during periods of low rates). Conversely, when the yield on long-term  
12 government bonds was high (i.e., 7.28% on average during periods of high interest  
13 rates) the spread narrowed to 3.98%. Over the entire spectrum of interest rates, the  
14 equity risk premium was 5.69% when the average government bond yield was 5.12%.  
15 With the forecast indicating an upward movement of interest rates that I described  
16 above from historically low levels, I have utilized a 6.50% equity risk premium. This  
17 equity risk premium is between the 7.36% premium related to periods of low interest  
18 rates and the 5.69% premium related to average interest rates across all levels.

1 **Q. What common equity cost rate did you determine based on your risk premium**  
2 **analysis?**

3 A. The cost of equity (i.e., “k”) is represented by the sum of the prospective yield for  
4 long-term public utility debt (i.e., “i”), the equity risk premium (i.e., “RP”), and  
5 flotation cost (“flot.”) adjustment. The Risk Premium approach provides a cost of  
6 equity of:

$$i + RP = k + flot. = K$$

Electric Group      5.00% + 6.50% = 11.50% + 0.16% = 11.66%

7 **CAPITAL ASSET PRICING MODEL**

8 **Q. What are the features of the CAPM as you have used it?**

9 A. The CAPM uses the yield on a risk-free interest bearing obligation plus a rate of  
10 return premium that is proportional to the systematic risk of an investment. As shown  
11 on Schedule 01, the result of the CAPM is 9.99%, excluding flotation costs, and  
12 10.15% including flotation costs. To compute the cost of equity with the CAPM,  
13 three components are necessary: a risk-free rate of return (“Rf”), the beta measure of  
14 systematic risk (“β”), and the market risk premium (“Rm-Rf”) derived from the total  
15 return on the market of equities reduced by the risk-free rate of return. The CAPM  
16 specifically accounts for differences in systematic risk (i.e., market risk as measured  
17 by the beta) between an individual firm or group of firms and the entire market of  
18 equities.

19 **Q. What betas have you considered in the CAPM?**

20 A. For my CAPM analysis, I initially considered the Value Line betas. As shown on  
21 Schedule 05, the average beta is 0.70 for the Electric Group.

1 **Q. What betas have you used in the CAPM determined cost of equity?**

2 A. The betas must be reflective of the financial risk associated with the ratesetting  
3 capital structure that is measured at book value. Therefore, Value Line betas cannot  
4 be used directly in the CAPM, unless the cost rate developed using those betas is  
5 applied to a capital structure measured with market values. To develop a CAPM cost  
6 rate applicable to a book-value capital structure, the Value Line (market value) betas  
7 have been unleveraged and releveraged for the book value common equity ratios  
8 using the Hamada formula,<sup>5</sup> as follows:

9 
$$\beta_l = \beta_u [1 + (1 - t) D/E + P/E]$$

10 where  $\beta_l$  = the leveraged beta,  $\beta_u$  = the unleveraged beta,  $t$  = income tax rate,  $D$  =  
11 debt ratio,  $P$  = preferred stock ratio, and  $E$  = common equity ratio. The betas  
12 published by Value Line have been calculated with the market price of stock and are  
13 related to the market value capitalization. By using the formula shown above and the  
14 capital structure ratios measured at market value, the beta would become 0.48 for the  
15 Electric Group if it employed no leverage and was 100% equity financed. Those  
16 calculations are shown on Schedule 05 under the section labeled "Hamada" who is  
17 credited with developing those formulas. With the unleveraged beta as a base, I  
18 calculated the leveraged beta of 0.85 for the book value capital structure of the  
19 Electric Group. The book value leveraged beta that I will employ in the CAPM cost  
20 of equity is 0.85 for the Electric Group.

---

<sup>5</sup> Robert S. Hamada, "The Effects of the Firm's Capital Structure on the Systematic Risk of Common Stocks" *The Journal of Finance* Vol. 27, No. 2, Papers and Proceedings of the Thirtieth Annual Meeting of the American Finance Association, New Orleans, Louisiana, December 27-29, 1971 (May 1972), pp.435-452.

1 **Q. What risk-free rate have you used in the CAPM?**

2 A. As shown on page 1 of Schedule 09, I provided the historical yields on Treasury notes  
3 and bonds. For the twelve months ended December 2015, the average yield on 30-  
4 year Treasury bonds was 2.84%. For the six- and three-months ended December  
5 2015, the yields on 30-year Treasury bonds were 2.96% and 2.96%, respectively.  
6 During the twelve-months ended December 2015, the range of the yields on 30-year  
7 Treasury bonds was 2.46% to 3.11%. The low yields that existed during recent  
8 periods can be traced to the financial crisis and its aftermath commonly referred to as  
9 the Great Recession. The resulting decline in the yields on Treasury obligations was  
10 attributed to a number of factors, including: the sovereign debt crisis in the euro  
11 zone, concern over a possible double dip recession, the potential for deflation, and the  
12 Federal Reserve's large balance sheet that was expanded through the purchase of  
13 Treasury obligations and mortgage-backed securities (also known as QEI, QEII, and  
14 QEIII), and the reinvestment of the proceeds from maturing obligations and the  
15 lengthening of the maturity of the Fed's bond portfolio through the sale of short-term  
16 Treasuries and the purchase of long-term Treasury obligations (also known as  
17 "operation twist"). Essentially, low interest rates were the product of the policy of the  
18 Federal Open Market Committee ("FOMC") in its attempt to deal with stagnant job  
19 growth, which is part of its dual mandate. The FOMC has ended its bond purchasing  
20 program and, at its December 16, 2015 meeting, the FOMC increased the federal  
21 funds rate range by 0.25 percentage points. The prospect exists that future increases  
22 in the federal funds rate will likely occur.

1           As shown on page 2 of Schedule 09, forecasts published by Blue Chip on  
2           January 1, 2016 indicate that the yields on long-term Treasury bonds are expected to  
3           be in the range of 3.1% to 3.8% during the next six quarters. The longer term  
4           forecasts described previously show that the yields on 30-year Treasury bonds will  
5           average 4.5% from 2017 through 2021 and 4.8% from 2022 to 2026. For the reasons  
6           explained previously, forecasts of interest rates should be emphasized at this time in  
7           selecting the risk-free rate of return in CAPM. Hence, I have used a 3.75% risk-free  
8           rate of return for CAPM purposes, which considers not only the Blue Chip forecasts,  
9           but also the recent trend in the yields on long-term Treasury bonds.

10   **Q.   What market premium have you used in the CAPM?**

11   A.   As shown in the lower panel of data presented on page 2 of Schedule 09, the market  
12   premium is derived from historical data and the Value Line and S&P 500 returns. For  
13   the historically based market premium, I have used the arithmetic mean obtained  
14   from the data presented on page 1 of Schedule 08. On that schedule, the market  
15   return was 12.21% on large stocks during periods of low interest rates. During those  
16   periods, the yield on long-term government bonds was 3.00% when interest rates  
17   were low. As I describe above, interest rates are forecast to trend upward in the  
18   future. To recognize that trend, I have given weight to the average returns and yields  
19   that existed across all interest rate levels. As such, I carried over to page 2 of  
20   Schedule 09 the average large common stock returns of 12.14% ( $12.21\% + 12.07\% =$   
21    $24.28\% \div 2$ ) and the average yield on long-term government bonds of 4.06% ( $3.00\%$   
22    $+ 5.12\% = 8.12\% \div 2$ ). These financial returns rest between those experienced during

1 periods of low interest rates and those experienced across all levels of interest rates.  
2 The resulting market premium is 8.08% (12.14% - 4.06%) based on historical data, as  
3 shown on page 2 of Schedule 09. For the forecast returns, I calculated a 13.07% total  
4 market return from the Value Line data and a DCF return of 7.61% for the S&P 500.  
5 With the average forecast return of 10.34% (13.07% + 7.61% = 20.68% ÷ 2), I  
6 calculated a market premium of 6.59% (10.34% - 3.75%) using forecast data. The  
7 market premium applicable to the CAPM derived from these sources equals 7.34%  
8 (6.59% + 8.08% = 14.67% ÷ 2).

9 **Q. What CAPM result have you determined?**

10 A. Using the 3.75% risk-free rate of return, the leverage adjusted beta of 0.85 for the  
11 Electric Group, the 7.34% market premium, and 0.16% flotation adjustment, the  
12 following result is indicated.

$$R_f + \beta \times (R_m - R_f) + size = k + flot. = K$$

$$\text{Electric Group } 3.75\% + 0.85 \times (7.34\%) + 0.00\% = 9.99\% + 0.16\% = 10.15\%$$

13 **COMPARABLE EARNINGS APPROACH**

14 **Q. How have you applied the Comparable Earnings approach in this case?**

15 A. The Comparable Earnings approach determines the equity return based upon results  
16 from non-regulated companies. It is the oldest of all rate of return methods, having  
17 been around for about one century. Because regulation is a substitute for  
18 competitively determined prices, the returns realized by non-regulated firms with  
19 comparable risks to a public utility provide useful insight into a fair rate of return. In  
20 order to identify the appropriate return, it is necessary to analyze returns earned (or

1 realized) by other firms within the context of the Comparable Earnings standard. The  
2 firms selected for the Comparable Earnings approach should be companies whose  
3 prices are not subject to cost-based price ceilings (i.e., non-regulated firms) so that  
4 circularity is avoided.

5 There are two avenues available to implement the Comparable Earnings  
6 approach. One method involves the selection of another industry (or industries) with  
7 comparable risks to the public utility in question, and the results for all companies  
8 within that industry serve as a benchmark. The second approach requires the  
9 selection of parameters that represent similar risk traits for the public utility and the  
10 comparable risk companies. Using this approach, the business lines of the  
11 comparable companies become unimportant. The latter approach is preferable with  
12 the further qualification that the comparable risk companies exclude regulated firms  
13 in order to avoid the circular reasoning implicit in the use of the achieved  
14 earnings/book ratios of other regulated firms. The United States Supreme Court has  
15 held that:

16 A public utility is entitled to such rates as will permit it to earn  
17 a return on the value of the property which it employs for the  
18 convenience of the public equal to that generally being made at  
19 the same time and in the same general part of the country on  
20 investments in other business undertakings which are attended  
21 by corresponding risks and uncertainties. The return should be  
22 reasonably sufficient to assure confidence in the financial  
23 soundness of the utility and should be adequate, under efficient  
24 and economical management, to maintain and support its credit  
25 and enable it to raise the money necessary for the proper  
26 discharge of its public duties. Bluefield Water Works vs.  
27 Public Service Commission, 262 U.S. 668 (1923).

1 It is important to identify the returns earned by firms that compete for capital with a  
2 public utility. This can be accomplished by analyzing the returns of non-regulated  
3 firms that are subject to the competitive forces of the marketplace.

4 **Q. How have you implemented the Comparable Earnings Approach?**

5 A. In order to implement the Comparable Earnings approach, non-regulated companies  
6 were selected from The Value Line Investment Survey for Windows that have six  
7 categories of comparability designed to reflect the risk of the Electric Group. These  
8 screening criteria were based upon the range as defined by the rankings of the  
9 companies in the Electric Group. The items considered were: Timeliness Rank,  
10 Safety Rank, Financial Strength, Price Stability, Value Line betas, and Technical  
11 Rank. The definition for these parameters is provided on page 3 of Schedule 10. In  
12 order to assemble a group of adequate size, it was necessary to relax the price stability  
13 and beta range of the Electric Group. The identities of the companies comprising the  
14 Comparable Earnings group and their associated rankings within the ranges are  
15 identified on page 1 of Schedule 10.

16 Value Line data was relied upon because it provides a comprehensive basis  
17 for evaluating the risks of the comparable firms. As to the returns calculated by  
18 Value Line for these companies, there is some downward bias in the figures shown on  
19 page 2 of Schedule 10, because Value Line computes the returns on year-end rather  
20 than average book value. If average book values had been employed, the rates of  
21 return would have been slightly higher. Nevertheless, these are the returns considered  
22 by investors when taking positions in these stocks. Because many of the

1 comparability factors, as well as the published returns, are used by investors in  
2 selecting stocks, and the fact that investors rely on the Value Line service to gauge  
3 returns, it is an appropriate database for measuring comparable return opportunities.

4 **Q. What data have you used in your Comparable Earnings analysis?**

5 A. I have used both historical realized returns and forecasted returns for non-utility  
6 companies. As noted previously, I have not used returns for utility companies in  
7 order to avoid the circularity that arises from using regulatory-influenced returns to  
8 determine a regulated return. It is appropriate to consider a relatively long  
9 measurement period in the Comparable Earnings approach in order to cover  
10 conditions over an entire business cycle. A ten-year period (five historical years and  
11 five projected years) is sufficient to cover an average business cycle. Unlike the DCF  
12 and CAPM, the results of the Comparable Earnings method can be applied directly to  
13 the book value capitalization. In other words, the Comparable Earnings approach  
14 does not contain the potential misspecification contained in market models when the  
15 market capitalization and book value capitalization diverge significantly. A point of  
16 demarcation was chosen to eliminate the results of highly profitable enterprises,  
17 which the Bluefield case stated were not the type of returns that a utility was entitled  
18 to earn. For this purpose, I used 20% as the point where those returns could be  
19 viewed as highly profitable and should be excluded from the Comparable Earnings  
20 approach. The average historical rate of return on book common equity was 11.2%  
21 using only the returns that were less than 20%, as shown on page 2 of Schedule 10.  
22 The average forecasted rate of return as published by Value Line is 10.9% also using

1 values less than 20%, as provided on page 2 of Schedule 10. Using the average of  
2 these data my Comparable Earnings result is 11.05%, as shown on Schedule 1.

3 **CONCLUSION ON COST OF EQUITY**

4 **Q. What is your conclusion regarding the Company's cost of common equity?**

5 A. Based upon the application of a variety of methods and models described previously,  
6 it is my opinion that the rate of return on common equity is 11.00% for PSE&G. It is  
7 essential that the Board employ a variety of techniques to measure the Company's  
8 cost of equity because of the limitations/infirmities that are inherent in each method.

9 **Q. Does this conclude your direct testimony at this time?**

10 A. Yes, it does.

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DIRECT TESTIMONY  
OF  
PAUL R. MOUL, MANAGING CONSULTANT  
P. MOUL & ASSOCIATES**

**EDUCATIONAL BACKGROUND, BUSINESS EXPERIENCE  
AND QUALIFICATIONS**

1  
2  
3 I was awarded a degree of Bachelor of Science in Business Administration by Drexel  
4 University in 1971. While at Drexel, I participated in the Cooperative Education Program  
5 which included employment, for one year, with American Water Works Service Company,  
6 Inc., as an internal auditor, where I was involved in the audits of several operating water  
7 companies of the American Water Works System and participated in the preparation of  
8 annual reports to regulatory agencies and assisted in other general accounting matters.

9 Upon graduation from Drexel University, I was employed by American Water Works  
10 Service Company, Inc., in the Eastern Regional Treasury Department where my duties  
11 included preparation of rate case exhibits for submission to regulatory agencies, as well as  
12 responsibility for various treasury functions of the thirteen New England operating  
13 subsidiaries.

14 In 1973, I joined the Municipal Financial Services Department of Betz Environmental  
15 Engineers, a consulting engineering firm, where I specialized in financial studies for  
16 municipal water and wastewater systems.

17 In 1974, I joined Associated Utility Services, Inc., now known as AUS Consultants. I  
18 held various positions with the Utility Services Group of AUS Consultants, concluding my  
19 employment there as a Senior Vice President.

20 In 1994, I formed P. Moul & Associates, an independent financial and regulatory  
21 consulting firm. In my capacity as Managing Consultant and for the past forty-two years, I

1 have continuously studied the rate of return requirements for cost of service-regulated firms.  
2 In this regard, I have supervised the preparation of rate of return studies, which were  
3 employed, in connection with my testimony and in the past for other individuals. I have  
4 presented direct testimony on the subject of fair rate of return, evaluated rate of return  
5 testimony of other witnesses, and presented testimony.

6 My studies and prepared direct testimony have been presented before thirty-seven  
7 (37) federal, state and municipal regulatory commissions, consisting of: the Federal Energy  
8 Regulatory Commission; state public utility commissions in Alabama, Alaska, California,  
9 Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa,  
10 Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri,  
11 New Hampshire, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania,  
12 Rhode Island, South Carolina, Tennessee, Texas, Virginia, West Virginia, Wisconsin, and the  
13 Philadelphia Gas Commission, and the Texas Commission on Environmental Quality. My  
14 testimony has been offered in over 200 rate cases involving electric power, natural gas  
15 distribution and transmission, resource recovery, solid waste collection and disposal,  
16 telephone, wastewater, and water service utility companies. While my testimony has  
17 involved principally fair rate of return and financial matters, I have also testified on capital  
18 allocations, capital recovery, cash working capital, income taxes, factoring of accounts  
19 receivable, and take-or-pay expense recovery. My testimony has been offered on behalf of  
20 municipal and investor-owned public utilities and for the staff of a regulatory commission. I  
21 have also testified at an Executive Session of the State of New Jersey Commission of  
22 Investigation concerning the BPU regulation of solid waste collection and disposal.

1 I was a co-author of a verified statement submitted to the Interstate Commerce  
2 Commission concerning the 1983 Railroad Cost of Capital (Ex Parte No. 452). I was also  
3 co-author of comments submitted to the Federal Energy Regulatory Commission regarding  
4 the Generic Determination of Rate of Return on Common Equity for Public Utilities in 1985,  
5 1986 and 1987 (Docket Nos. RM85-19-000, RM86-12-000, RM87-35-000 and RM88-25-  
6 000). Further, I have been the consultant to the New York Chapter of the National  
7 Association of Water Companies, which represented the water utility group in the Proceeding  
8 on Motion of the Commission to Consider Financial Regulatory Policies for New York  
9 Utilities (Case 91-M-0509). I have also submitted comments to the Federal Energy  
10 Regulatory Commission in its Notice of Proposed Rulemaking (Docket No. RM99-2-000)  
11 concerning Regional Transmission Organizations and on behalf of the Edison Electric  
12 Institute in its intervention in the case of Southern California Edison Company (Docket No.  
13 ER97-2355-000). Also, I was a member of the panel of participants at the Technical  
14 Conference in Docket No. PL07-2 on the Composition of Proxy Groups for Determining Gas  
15 and Oil Pipeline Return on Equity.

16 In late 1978, I arranged for the private placement of bonds on behalf of an investor-  
17 owned public utility. I have assisted in the preparation of a report to the Delaware Public  
18 Service Commission relative to the operations of the Lincoln and Ellendale Electric  
19 Company. I was also engaged by the Delaware P.S.C. to review and report on the proposed  
20 financing and disposition of certain assets of Sussex Shores Water Company (P.S.C. Docket  
21 Nos. 24-79 and 47-79). I was a co-author of a Report on Proposed Mandatory Solid Waste

1 Collection Ordinance prepared for the Board of County Commissioners of Collier County,  
2 Florida.

3 I have been a consultant to the Bucks County Water and Sewer Authority concerning  
4 rates and charges for wholesale contract service with the City of Philadelphia. My municipal  
5 consulting experience also included an assignment for Baltimore County, Maryland,  
6 regarding the City/County Water Agreement for Metropolitan District customers (Circuit  
7 Court for Baltimore County in Case 34/153/87-CSP-2636).

STATE OF NEW JERSEY  
BOARD OF PUBLIC UTILITIES

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IN THE MATTER OF THE PETITION OF  
**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**

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BPU Docket No. \_\_\_\_\_

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Exhibit

To Accompany the

Direct Testimony

of

Paul R. Moul, Managing Consultant  
P. Moul & Associates

March 4, 2016

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**  
Index of Schedules

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**Public Service Electric & Gas Company**

Cost of Equity  
as of December 31, 2015

<b>Discounted Cash Flow (DCF)</b>	$D_1/P_0$	+	$g$	+	$lev.$	=	$k$	x	$flot.$	=	$K$
Electric Group	4.18%	+	5.25%	+	1.10%	=	10.53%	x	1.015	=	10.69%

<b>Risk Premium (RP)</b>			$I$	+	$RP$	=	$k$	+	$flot.$	=	$K$
Electric Group			5.00%	+	6.50%	=	11.50%	+	0.16%	=	11.66%

<b>Capital Asset Pricing Model (CAPM)</b>	$Rf$	+	$\beta$	x	$(Rm-Rf)$	+	$size$	=	$k$	+	$flot.$	=	$K$
Electric Group	3.75%	+	0.85	x	( 7.34% )	+	0.00%	=	9.99%	+	0.16%	=	10.15%

<b>Comparable Earnings (CE)</b> <sup>(10)</sup>		<b>Historical</b>	<b>Forecast</b>	<b>Average</b>
Comparable Earnings Group		11.2%	10.9%	11.05%

- References:
- (1) Schedule 02
  - (2) Schedule 05
  - (3) Schedule 06
  - (4) A-rated public utility bond yield comprised of a 3.75% risk-free rate of return (Schedule 09 page 2) and a yield spread of 1.25% (Schedule 07 page 3)
  - (5) Schedule 08
  - (6) Schedule 09 page 2
  - (7) Schedule 05
  - (8) Schedule 09 page 2
  - (9) Schedule 09 page 3
  - (10) Schedule 10 pages 2 & 4

**Monthly Dividend Yields for  
Electric Group  
for the Twelve Months Ending December 2015**

<u>Company</u>	<u>Jan-15</u>	<u>Feb-15</u>	<u>Mar-15</u>	<u>Apr-15</u>	<u>May-15</u>	<u>Jun-15</u>	<u>Jul-15</u>	<u>Aug-15</u>	<u>Sep-15</u>	<u>Oct-15</u>	<u>Nov-15</u>	<u>Dec-15</u>	<u>12-Month Average</u>	<u>6-Month Average</u>	<u>3-Month Average</u>
Consolidated Edison Inc (ED)	3.79%	4.12%	4.29%	4.26%	4.21%	4.52%	4.12%	4.14%	3.91%	3.99%	4.19%	4.07%			
Dominion Resources Inc (D)	3.39%	3.59%	3.67%	3.64%	3.67%	3.89%	3.64%	3.72%	3.69%	3.65%	3.85%	3.84%			
Duke Energy Corporation (DUK)	3.68%	4.06%	4.16%	4.14%	4.21%	4.53%	4.49%	4.67%	4.62%	4.66%	4.88%	4.65%			
Eversource Energy (ES)	3.02%	3.25%	3.32%	3.45%	3.39%	3.69%	3.38%	3.57%	3.31%	3.29%	3.30%	3.28%			
FirstEnergy Corp (FE)	3.60%	4.13%	4.13%	4.05%	4.05%	4.45%	4.28%	4.52%	4.63%	4.67%	4.60%	4.57%			
NextEra Energy Inc (NEE)	2.83%	2.98%	2.97%	3.07%	3.01%	3.15%	2.94%	3.13%	3.17%	3.02%	3.09%	2.97%			
PPL Corp (PPL)	4.22%	4.41%	4.44%	4.41%	4.34%	5.07%	4.78%	4.93%	4.60%	4.42%	4.48%	4.44%			
Public Service Enterprise Group Inc (PEG)	3.67%	3.74%	3.73%	3.78%	3.69%	3.98%	3.77%	3.91%	3.71%	3.80%	4.03%	4.04%			
SCANA Corp (SCG)	3.44%	3.86%	3.98%	4.14%	4.14%	4.32%	4.00%	4.16%	3.88%	3.70%	3.72%	3.61%			
Southern Co (SO)	4.18%	4.60%	4.77%	4.95%	4.98%	5.21%	4.90%	5.01%	4.89%	4.86%	4.88%	4.67%			
<b>Average</b>	<b><u>3.58%</u></b>	<b><u>3.87%</u></b>	<b><u>3.95%</u></b>	<b><u>3.99%</u></b>	<b><u>3.97%</u></b>	<b><u>4.28%</u></b>	<b><u>4.03%</u></b>	<b><u>4.18%</u></b>	<b><u>4.04%</u></b>	<b><u>4.01%</u></b>	<b><u>4.10%</u></b>	<b><u>4.01%</u></b>	<b><u>4.00%</u></b>	<b><u>4.06%</u></b>	<b><u>4.04%</u></b>

Note: Monthly dividend yields are calculated by dividing the annualized quarterly dividend by the month-end closing stock price adjusted by the fraction of the ex-dividend.

Source of Information: <http://performance.morningstar.com/stock/performance-return>  
<http://www.snl.com/interactivex/dividends>

<b>Forward-looking Dividend Yield</b>	1/2 Growth	D <sub>0</sub> /P <sub>0</sub>	(.5g)	D <sub>1</sub> /P <sub>0</sub>	$K = \frac{D_0(1+g)^0 + D_0(1+g)^0 + D_0(1+g)^1 + D_0(1+g)^1}{P_0} + g$
		4.06%	1.026250	4.17%	
	Discrete	D <sub>0</sub> /P <sub>0</sub>	Adj.	D <sub>1</sub> /P <sub>0</sub>	$K = \frac{D_0(1+g)^{25} + D_0(1+g)^{50} + D_0(1+g)^{75} + D_0(1+g)^{100}}{P_0} + g$
		4.06%	1.032603	4.19%	
	Quarterly	D <sub>0</sub> /P <sub>0</sub>	Adj.	D <sub>1</sub> /P <sub>0</sub>	$K = \left[ \left( 1 + \frac{D_0(1+g)^{25}}{P_0} \right)^4 - 1 \right] + g$
	Average	1.0154%	1.012874	<u>4.18%</u>	
				4.18%	
	<b>Growth rate</b>			<u>5.25%</u>	
	<b>K</b>			<u>9.43%</u>	

**Historical Growth Rates**  
Earnings Per Share, Dividends Per Share,  
Book Value Per Share, and Cash Flow Per Share

<b>Electric Group</b>	<b>Earnings per Share</b>		<b>Dividends per Share</b>		<b>Book Value per Share</b>		<b>Cash Flow per Share</b>	
	<u>Value Line</u>		<u>Value Line</u>		<u>Value Line</u>		<u>Value Line</u>	
	<u>5 Year</u>	<u>10 Year</u>	<u>5 Year</u>	<u>10 Year</u>	<u>5 Year</u>	<u>10 Year</u>	<u>5 Year</u>	<u>10 Year</u>
Consolidated Edison Inc (ED)	3.00%	2.00%	1.00%	1.00%	4.00%	4.00%	4.50%	2.50%
Dominion Resources Inc (D)	2.50%	4.00%	7.50%	5.00%	2.50%	2.00%	1.00%	2.50%
Duke Energy Corporation (DUK)	4.50%	-	11.50%	-	0.50%	-	0.50%	-
Eversource Energy (ES)	6.00%	7.50%	8.00%	7.50%	7.50%	8.00%	5.50%	6.50%
FirstEnergy Corp (FE)	0.50%	4.00%	3.50%	8.00%	6.00%	10.00%	-	3.00%
NextEra Energy Inc (NEE)	3.00%	3.00%	2.50%	4.50%	4.50%	4.50%	2.00%	3.00%
PPL Corp (PPL)	3.50%	4.00%	4.00%	3.50%	5.50%	5.50%	4.00%	4.00%
Public Service Enterprise Group Inc (PEG)	3.50%	4.00%	4.00%	3.50%	5.50%	5.50%	4.00%	4.00%
SCANA Corp (SCG)	0.50%	-2.00%	2.50%	-3.50%	3.00%	-1.50%	2.50%	-2.00%
Southern Co (SO)	2.00%	1.00%	-	-	4.00%	1.00%	0.50%	-0.50%
Average	<u>2.90%</u>	<u>3.06%</u>	<u>4.94%</u>	<u>3.69%</u>	<u>4.30%</u>	<u>4.33%</u>	<u>2.72%</u>	<u>2.56%</u>

Source of Information: Value Line Investment Survey, November 20, 2015

**Analysts' Five-Year Projected Growth Rates**  
Earnings Per Share, Dividends Per Share,  
Book Value Per Share, and Cash Flow Per Share

<u>Electric Group</u>	<u>I/B/E/S First Call</u>	<u>Zacks</u>	<u>Morningstar</u>	<u>SNL</u>	<u>Value Line</u>				
					<u>Earnings Per Share</u>	<u>Dividends Per Share</u>	<u>Book Value Per Share</u>	<u>Cash Flow Per Share</u>	<u>Percent Retained to Common Equity</u>
Consolidated Edison Inc (ED)	2.95%	3.10%	2.40%	2.90%	3.00%	2.50%	3.00%	4.00%	3.00%
Dominion Resources Inc (D)	5.49%	6.20%	7.40%	6.50%	8.00%	7.50%	6.00%	7.00%	5.00%
Duke Energy Corporation (DUK)	3.27%	4.10%	4.10%	4.20%	5.00%	3.50%	1.50%	5.00%	2.00%
Eversource Energy (ES)	6.57%	6.80%	7.00%	6.00%	8.50%	6.50%	4.00%	6.50%	4.00%
FirstEnergy Corp (FE) <sup>(1)</sup>		NA	10.10%	2.00%	7.00%		3.00%	6.50%	4.50%
NextEra Energy Inc (NEE)	7.08%	7.10%	2.90%	6.90%	7.50%	11.00%	6.50%	7.00%	4.50%
PPL Corp (PPL)	3.74%	5.20%	0.30%	4.00%	NMF	1.50%	NMF	NMF	5.00%
Public Service Enterprise Group Inc	1.38%	2.80%	7.50%	1.80%	5.00%	4.50%	5.50%	6.00%	5.00%
SCANA Corp (SCG)	4.45%	4.30%	5.10%	6.30%	4.50%	3.50%	6.00%	4.00%	4.50%
Southern Co (SO)	3.73%	3.90%	3.90%	3.00%	4.50%	3.00%	3.00%	3.00%	4.00%
Average	<u>4.30%</u>	<u>4.83%</u>	<u>5.07%</u>	<u>4.36%</u>	<u>5.89%</u>	<u>4.83%</u>	<u>4.28%</u>	<u>5.44%</u>	<u>4.15%</u>

Note: <sup>(1)</sup> Excluding negative earnings growth rate of -0.92% by I/B/E/S First Call and negative dividends growth rate of -1.50% by Value Line.

Source of Information :  
 Yahoo Finance, January 5, 2016  
 Zacks, January 5, 2016  
 Morningstar, January 5, 2016  
 SNL, January 5, 2016  
 Value Line Investment Survey, November 20, 2015

**Electric Group**  
Financial Risk Adjustment

Fiscal Year	Consolidated	Dominion	Duke Energy	Eversource	FirstEnergy Corp	NextEra Energy	Public Service	Public Service	SCANA Corp	Southern Co	Average	
	Edison Inc (ED)	Resources Inc (D)	Corporation (DUK)	Energy (ES)	(FE)	Inc (NEE)	Enterprise Group	Inc (PEG)	(SCG)	(SO)		
	12/31/14	12/31/14	12/31/14	12/31/14	12/31/14	12/31/14	12/31/14	12/31/14	12/31/14	12/31/14		
<b>Capitalization at Fair Values</b>												
Debt(D)	13,998,000	25,639,000	44,566,000	9,451,200	21,733,000	30,337,000	22,670,000	10,149,000	6,592,100	25,816,000	21,095,130	
Preferred(P)	0	0	0	153,600	0	0	0	0	0	1,352,000	150,560	
Equity(E)	19,332,758	44,986,500	59,062,780	16,964,948	16,418,789	47,086,470	24,190,296	20,946,693	8,619,080	44,606,613	30,221,493	
Total	33,330,758	70,625,500	103,628,780	26,569,748	38,151,789	77,423,470	46,860,296	31,095,693	15,211,180	71,774,613	51,467,183	
<b>Capital Structure Ratios</b>												
Debt(D)	42.00%	36.30%	43.01%	35.57%	56.96%	39.18%	48.38%	32.64%	43.34%	35.97%	41.34%	
Preferred(P)	0.00%	0.00%	0.00%	0.58%	0.00%	0.00%	0.00%	0.00%	0.00%	1.88%	0.25%	
Equity(E)	58.00%	63.70%	56.99%	63.85%	43.04%	60.82%	51.62%	67.36%	56.66%	62.15%	58.42%	
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.01%	
<b>Common Stock</b>												
Issued		585,000,000	707,000,000		421,102,570	443,000,000	665,849,000	533,556,660	142,700,000	909,000,000		
Treasury		0.000	0.000		0.000	0.000	0.000	27,720,068	0.000	700,000		
Outstanding	292,876,196	585,000,000	707,000,000	316,983,337	421,102,570	443,000,000	665,849,000	505,836,592	142,700,000	908,300,000		
Market Price	\$66.01	\$76.90	\$83.54	\$53.52	\$38.99	\$106.29	\$36.33	\$41.41	\$60.40	\$49.11		
<b>Capitalization at Carrying Amounts</b>												
Debt(D)	12,191,000	23,180,000	40,020,000	8,851,600	19,828,000	27,876,000	20,391,000	9,144,000	5,697,200	24,015,000	19,119,380	
Preferred(P)	0	0	0	155,600	0	0	0	0	0	1,352,000	150,760	
Equity(E)	12,576,000	11,555,000	40,875,000	9,976,815	12,420,000	19,916,000	13,628,000	12,185,000	4,987,000	19,949,000	15,806,782	
Total	24,767,000	34,735,000	80,895,000	18,984,015	32,248,000	47,792,000	34,019,000	21,329,000	10,684,200	45,316,000	35,076,922	
<b>Capital Structure Ratios</b>												
Debt(D)	49.22%	66.73%	49.47%	46.63%	61.49%	58.33%	59.94%	42.87%	53.32%	52.99%	54.10%	
Preferred(P)	0.00%	0.00%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	0.00%	2.98%	0.38%	
Equity(E)	50.78%	33.27%	50.53%	52.55%	38.51%	41.67%	40.06%	57.13%	46.68%	44.02%	45.52%	
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.99%	100.00%	
<b>Betas</b>												
Value Line	0.60	0.70	0.65	0.75	0.70	0.75	0.70	0.75	0.75	0.60	0.70	
<b>Hamada</b>												
BI	=	Bu	[1+ (1 - t)	D/E	+	P/E	]					
0.70	=	Bu	[1+ (1-0.35)	0.7076	+	0.0043	]					
0.70	=	Bu	[1+ 0.65	0.7076	+	0.0043	]					
0.70	=	Bu	1.4642									
0.48	=	Bu										
<b>Hamada</b>												
BI	=	0.48	[1+ (1 - t)	D/E	+	P/E	]					
BI	=	0.48	[1+ 0.65	1.1885	+	0.0083	]					
BI	=	0.48	1.7808									
BI	=	0.85										
<b>M&amp;M</b>												
ku	=	ke	- ((( ku	-	i	)	1-t	)	D	/	E	)- ( ku - d ) P / E
7.82%	=	9.43%	- ((( 7.82%	-	4.35%	)	0.65	)	41.34%	/	58.42%	)- ( 7.82% - 5.68% ) 0.25% / 58.42%
7.82%	=	9.43%	- ((( 3.47%	-		)	0.65	)	0.7076	/		)- ( 2.14% ) 0.0043
7.82%	=	9.43%	- (( 2.26%	-		)		)	0.7076	/		)- ( 2.14% ) 0.0043
7.82%	=	9.43%	- 1.60%	-		)		)		/		- 0.01%
<b>M&amp;M</b>												
ke	=	ku	+ ((( ku	-	i	)	1-t	)	D	/	E	)+ ( ku - d ) P / E
10.53%	=	7.82%	+ ((( 7.82%	-	4.35%	)	0.65	)	54.10%	/	45.52%	)+ ( 7.82% - 5.68% ) 0.38% / 45.52%
10.53%	=	7.82%	+ ((( 3.47%	-		)	0.65	)	1.1885	/		)+ ( 2.14% ) 0.0083
10.53%	=	7.82%	+ (( 2.26%	-		)		)	1.1885	/		)+ ( 2.14% ) 0.0083
10.53%	=	7.82%	+ 2.69%	-		)		)		/		+ 0.02%

Analysis of Public Offerings of Electric Company Common Stock

Company	Date of Offering	No. of shares offered	Dollar amount of offering	Price to public	Underwriters' discount and commission	Gross Proceeds per share	Estimated company issuance expenses	Net proceeds per share	Percent of offering price		
									Underwriters' discount and commission	Estimated company issuance expenses	Total Issuance and selling expense
Vectren Corp	02/22/07	4,600,000	\$ 130,318,000	\$28.330	\$0.990	\$27.340	\$0.092	\$ 27.248	3.5%	0.3%	3.8%
Energy East	03/21/07	9,000,000	\$ 218,250,000	\$24.250	\$0.728	\$23.522	\$0.018	\$ 23.504	3.0%	0.1%	3.1%
Empire District	12/06/07	3,000,000	\$ 69,000,000	\$23.000	\$0.997	\$22.003	\$0.083	\$ 21.920	4.3%	0.4%	4.7%
ITC Holdings	01/18/08	5,583,250	\$ 291,668,980	\$50.150	\$2.131	\$48.019	\$0.161	\$ 47.858	4.2%	0.3%	4.5%
Ottertail Corp	09/19/08	4,500,000	\$ 135,000,000	\$30.000	\$1.088	\$28.913	\$0.089	\$ 28.824	3.6%	0.3%	3.9%
OGE Energy	11/20/08	2,500,000	\$ 62,500,000	\$25.000	\$1.500	\$23.500	\$0.058	\$ 23.442	6.0%	0.2%	6.2%
PNM Resources	11/27/08	3,417,000	\$ 27,882,720	\$8.160	\$0.000	\$8.160	N/A	\$ 8.160	0.0%		0.0%
IDACORP	12/05/08	3,000,000	\$ 85,215,000	\$28.405	\$0.284	\$28.121	N/A	\$ 28.121	1.0%		1.0%
Progress Energy	01/07/09	12,500,000	\$ 468,750,000	\$37.500	\$1.125	\$36.375	\$0.024	\$ 36.351	3.0%	0.1%	3.1%
Portland General Elec	03/05/09	10,850,000	\$ 152,985,000	\$14.100	\$0.494	\$13.606	\$0.035	\$ 13.571	3.5%	0.2%	3.7%
Northeast Utilities	03/16/09	16,500,000	\$ 333,300,000	\$20.200	\$0.657	\$19.543	\$0.020	\$ 19.523	3.3%	0.1%	3.4%
American Elec Power	04/01/09	60,000,000	\$ 1,470,000,000	\$24.500	\$0.735	\$23.765	\$0.007	\$ 23.758	3.0%	0.0%	3.0%
Great Plains Energy	05/12/09	10,000,000	\$ 140,000,000	\$14.000	\$0.490	\$13.510	\$0.030	\$ 13.480	3.5%	0.2%	3.7%
UNITIL	05/20/09	2,400,000	\$ 48,000,000	\$20.000	\$1.050	\$18.950	N/A	\$ 18.950	5.3%		5.3%
UIL Holdings	05/20/09	4,000,000	\$ 84,000,000	\$21.000	\$1.050	\$19.950	\$0.081	\$ 19.869	5.0%	0.4%	5.4%
Ameren	09/09/09	19,000,000	\$ 479,750,000	\$25.250	\$0.758	\$24.492	\$0.024	\$ 24.468	3.0%	0.1%	3.1%
CenterPoint	09/10/09	21,000,000	\$ 252,000,000	\$12.000	\$0.420	\$11.580	N/A	\$ 11.580	3.5%		3.5%
Consolidated Edison	11/20/09	5,000,000	\$ 213,150,000	\$42.630	\$0.000	\$42.630	\$0.100	\$ 42.530	0.0%	0.2%	0.2%
Pinnacle West Capital Corp.	04/08/10	6,000,000	\$ 228,000,000	\$38.000	\$1.330	\$36.670	\$0.032	\$ 36.638	3.5%	0.1%	3.6%
SCANA Corp.	05/11/10	7,150,000	\$ 264,550,000	\$37.000	\$1.295	\$35.705	N/A	\$ 35.705	3.5%		3.5%
CenterPoint	06/09/10	22,000,000	\$ 283,800,000	\$12.900	\$0.452	\$12.448	\$0.013	\$ 12.435	3.5%	0.1%	3.6%
UIL Holdings	09/16/10	17,700,000	\$ 455,775,000	\$25.750	\$1.094	\$24.656	\$0.018	\$ 24.638	4.2%	0.1%	4.3%
Consolidated Edison	09/27/10	6,300,000	\$ 305,928,000	\$48.560	\$0.000	\$48.560	\$0.079	\$ 48.481	0.0%	0.2%	0.2%
Westar	11/04/10	7,500,000	\$ 191,550,000	\$25.540	\$0.894	\$24.646	N/A	\$ 24.646	3.5%		3.5%
Black Hills Corp.	11/10/10	4,000,000	\$ 119,000,000	\$29.750	\$1.040	\$28.710	\$0.069	\$ 28.641	3.5%	0.2%	3.7%
PPL Corp.	04/11/11	80,000,000	\$ 2,024,000,000	\$25.300	\$0.759	\$24.541	\$0.013	\$ 24.528	3.0%	0.1%	3.1%
PGE Corp.	03/15/12	5,900,000	\$ 254,231,000	\$43.090	\$0.080	\$43.010	\$0.028	\$ 42.982	0.2%	0.1%	0.3%
Average									3.1%	0.2%	3.2%

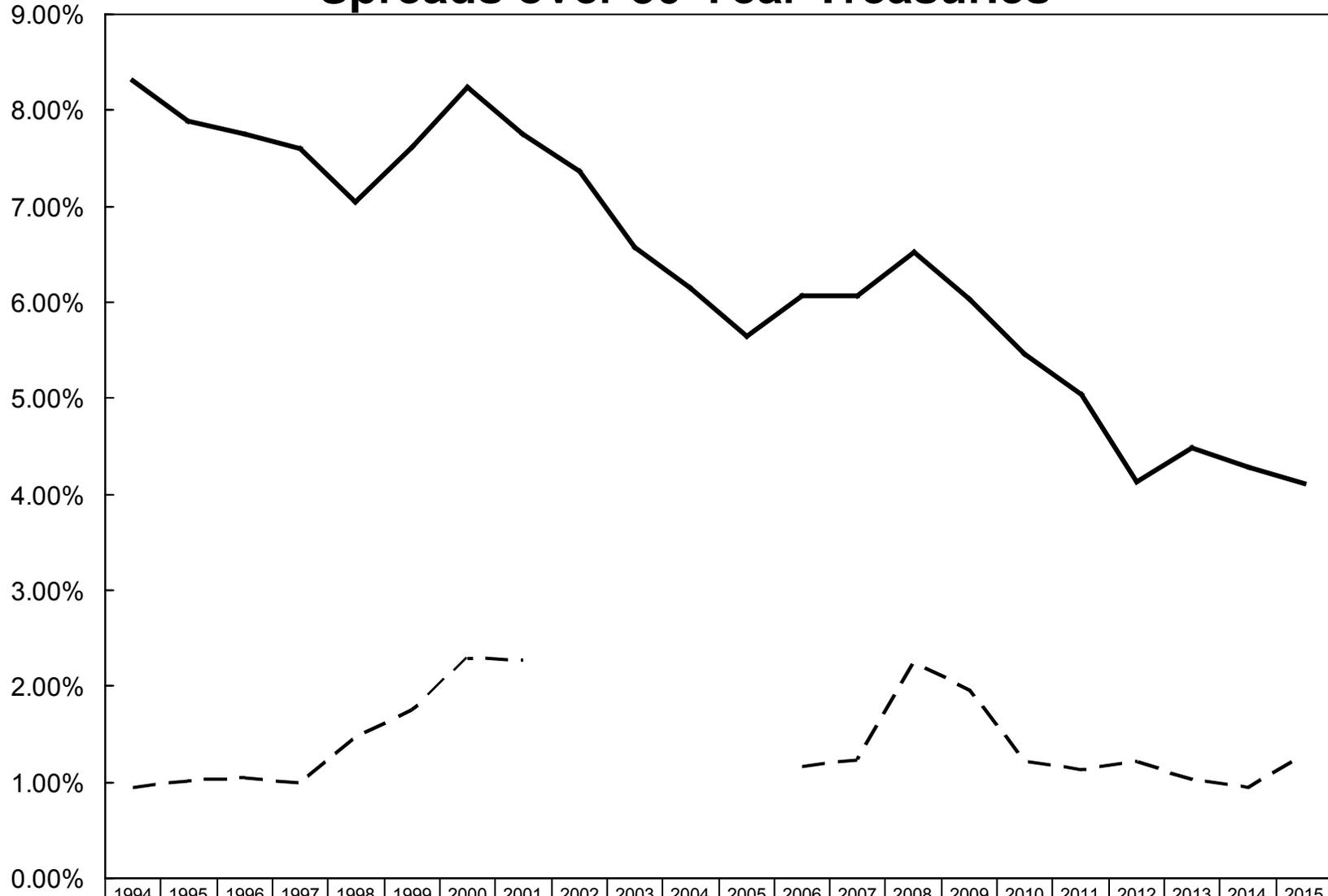
Source of Information: SNL Financial and SEC filings

**Interest Rates for Investment Grade Public Utility Bonds  
Yearly for 2010-2014  
and the Twelve Months Ended December 2015**

<u>Years</u>	<u>Aa Rated</u>	<u>A Rated</u>	<u>Baa Rated</u>	<u>Average</u>
2010	5.24%	5.46%	5.96%	5.55%
2011	4.78%	5.04%	5.57%	5.13%
2012	3.83%	4.13%	4.86%	4.27%
2013	4.24%	4.48%	4.98%	4.57%
2014	4.19%	4.28%	4.80%	4.42%
<b>Five-Year Average</b>	<u>4.46%</u>	<u>4.68%</u>	<u>5.23%</u>	<u>4.79%</u>
<b><u>Months</u></b>				
Jan-15	3.52%	3.58%	4.39%	3.83%
Feb-15	3.62%	3.67%	4.44%	3.91%
Mar-15	3.67%	3.74%	4.51%	3.97%
Apr-15	3.63%	3.75%	4.51%	3.96%
May-15	4.05%	4.17%	4.91%	4.38%
Jun-15	4.29%	4.39%	5.13%	4.60%
Jul-15	4.27%	4.40%	5.22%	4.63%
Aug-15	4.13%	4.25%	5.23%	4.54%
Sep-15	4.25%	4.39%	5.42%	4.68%
Oct-15	4.13%	4.29%	5.47%	4.63%
Nov-15	4.22%	4.40%	5.57%	4.73%
Dec-15	4.16%	4.35%	5.55%	4.69%
<b>Twelve-Month Average</b>	<u>4.00%</u>	<u>4.12%</u>	<u>5.03%</u>	<u>4.38%</u>
<b>Six-Month Average</b>	<u>4.19%</u>	<u>4.35%</u>	<u>5.41%</u>	<u>4.65%</u>
<b>Three-Month Average</b>	<u>4.17%</u>	<u>4.35%</u>	<u>5.53%</u>	<u>4.68%</u>

Source: Mergent Bond Record

# Yields on A-rated Public Utility Bonds and Spreads over 30-Year Treasuries



A-rated Public Utility	8.31%	7.89%	7.75%	7.60%	7.04%	7.62%	8.24%	7.76%	7.37%	6.58%	6.16%	5.65%	6.07%	6.07%	6.53%	6.04%	5.46%	5.04%	4.13%	4.48%	4.28%	4.12%
Spread vs. 30-year	0.94%	1.01%	1.04%	0.99%	1.46%	1.75%	2.30%	2.27%					1.16%	1.23%	2.25%	1.96%	1.21%	1.13%	1.21%	1.03%	0.94%	1.28%

**A rated Public Utility Bonds over 30-Year Treasuries**

A-rated Public Utility		30-Year Treasuries		A-rated Public Utility		30-Year Treasuries		A-rated Public Utility		30-Year Treasuries		A-rated Public Utility		30-Year Treasuries		A-rated Public Utility		30-Year Treasuries		
Year	Yield	Spread	Year	Yield	Spread	Year	Yield	Spread	Year	Yield	Spread	Year	Yield	Spread	Year	Yield	Spread	Year	Yield	Spread
Jan-99	6.97%	5.16%	1.81%	Jan-03	7.07%	Jan-07	5.96%	4.85%	1.11%	Jan-11	5.57%	4.52%	1.05%	Jan-15	3.58%	2.46%	1.12%			
Feb-99	7.09%	5.37%	1.72%	Feb-03	6.93%	Feb-07	5.90%	4.82%	1.08%	Feb-11	5.68%	4.65%	1.03%	Feb-15	3.67%	2.57%	1.10%			
Mar-99	7.26%	5.58%	1.68%	Mar-03	6.79%	Mar-07	5.85%	4.72%	1.13%	Mar-11	5.56%	4.51%	1.05%	Mar-15	3.74%	2.63%	1.11%			
Apr-99	7.22%	5.55%	1.67%	Apr-03	6.64%	Apr-07	5.97%	4.87%	1.10%	Apr-11	5.55%	4.50%	1.05%	Apr-15	3.75%	2.59%	1.16%			
May-99	7.47%	5.81%	1.66%	May-03	6.36%	May-07	5.99%	4.90%	1.09%	May-11	5.32%	4.29%	1.03%	May-15	4.17%	2.96%	1.21%			
Jun-99	7.74%	6.04%	1.70%	Jun-03	6.21%	Jun-07	6.30%	5.20%	1.10%	Jun-11	5.26%	4.23%	1.03%	Jun-15	4.39%	3.11%	1.28%			
Jul-99	7.71%	5.98%	1.73%	Jul-03	6.57%	Jul-07	6.25%	5.11%	1.14%	Jul-11	5.27%	4.27%	1.00%	Jul-15	4.40%	3.07%	1.33%			
Aug-99	7.91%	6.07%	1.84%	Aug-03	6.78%	Aug-07	6.24%	4.93%	1.31%	Aug-11	4.69%	3.65%	1.04%	Aug-15	4.25%	2.86%	1.39%			
Sep-99	7.93%	6.07%	1.86%	Sep-03	6.56%	Sep-07	6.18%	4.79%	1.39%	Sep-11	4.48%	3.18%	1.30%	Sep-15	4.39%	2.95%	1.44%			
Oct-99	8.06%	6.26%	1.80%	Oct-03	6.43%	Oct-07	6.11%	4.77%	1.34%	Oct-11	4.52%	3.13%	1.39%	Oct-15	4.29%	2.89%	1.40%			
Nov-99	7.94%	6.15%	1.79%	Nov-03	6.37%	Nov-07	5.97%	4.52%	1.45%	Nov-11	4.25%	3.02%	1.23%	Nov-15	4.40%	3.03%	1.37%			
Dec-99	8.14%	6.35%	1.79%	Dec-03	6.27%	Dec-07	6.16%	4.53%	1.63%	Dec-11	4.33%	2.98%	1.35%	Dec-15	4.35%	2.97%	1.38%			
Jan-00	8.35%	6.63%	1.72%	Jan-04	6.15%	Jan-08	6.02%	4.33%	1.69%	Jan-12	4.34%	3.03%	1.31%	Average:						
Feb-00	8.25%	6.23%	2.02%	Feb-04	6.15%	Feb-08	6.21%	4.52%	1.69%	Feb-12	4.36%	3.11%	1.25%	12-months			1.27%			
Mar-00	8.28%	6.05%	2.23%	Mar-04	5.97%	Mar-08	6.21%	4.39%	1.82%	Mar-12	4.48%	3.28%	1.20%	6-months			1.39%			
Apr-00	8.29%	5.85%	2.44%	Apr-04	6.35%	Apr-08	6.29%	4.44%	1.85%	Apr-12	4.40%	3.18%	1.22%	3-months			1.38%			
May-00	8.70%	6.15%	2.55%	May-04	6.62%	May-08	6.28%	4.60%	1.68%	May-12	4.20%	2.93%	1.27%							
Jun-00	8.36%	5.93%	2.43%	Jun-04	6.46%	Jun-08	6.38%	4.69%	1.69%	Jun-12	4.08%	2.70%	1.38%							
Jul-00	8.25%	5.85%	2.40%	Jul-04	6.27%	Jul-08	6.40%	4.67%	1.83%	Jul-12	3.93%	2.59%	1.34%							
Aug-00	8.13%	5.72%	2.41%	Aug-04	6.14%	Aug-08	6.37%	4.50%	1.87%	Aug-12	4.00%	2.77%	1.23%							
Sep-00	8.23%	5.83%	2.40%	Sep-04	5.98%	Sep-08	6.49%	4.27%	2.22%	Sep-12	4.02%	2.88%	1.14%							
Oct-00	8.14%	5.80%	2.34%	Oct-04	5.94%	Oct-08	7.56%	4.17%	3.39%	Oct-12	3.91%	2.90%	1.01%							
Nov-00	8.11%	5.78%	2.33%	Nov-04	5.97%	Nov-08	7.60%	4.00%	3.60%	Nov-12	3.84%	2.80%	1.04%							
Dec-00	7.84%	5.49%	2.35%	Dec-04	5.92%	Dec-08	6.52%	2.87%	3.65%	Dec-12	4.00%	2.88%	1.12%							
Jan-01	7.80%	5.54%	2.26%	Jan-05	5.78%	Jan-09	6.39%	3.13%	3.26%	Jan-13	4.15%	3.08%	1.07%							
Feb-01	7.74%	5.45%	2.29%	Feb-05	5.61%	Feb-09	6.30%	3.59%	2.71%	Feb-13	4.18%	3.17%	1.01%							
Mar-01	7.68%	5.34%	2.34%	Mar-05	5.83%	Mar-09	6.42%	3.64%	2.78%	Mar-13	4.20%	3.16%	1.04%							
Apr-01	7.94%	5.65%	2.29%	Apr-05	5.64%	Apr-09	6.48%	3.76%	2.72%	Apr-13	4.00%	2.93%	1.07%							
May-01	7.99%	5.78%	2.21%	May-05	5.53%	May-09	6.49%	4.23%	2.26%	May-13	4.17%	3.11%	1.06%							
Jun-01	7.85%	5.67%	2.18%	Jun-05	5.40%	Jun-09	6.20%	4.52%	1.68%	Jun-13	4.53%	3.40%	1.13%							
Jul-01	7.78%	5.61%	2.17%	Jul-05	5.51%	Jul-09	5.97%	4.41%	1.56%	Jul-13	4.68%	3.61%	1.07%							
Aug-01	7.59%	5.48%	2.11%	Aug-05	5.50%	Aug-09	5.71%	4.37%	1.34%	Aug-13	4.73%	3.76%	0.97%							
Sep-01	7.75%	5.48%	2.27%	Sep-05	5.52%	Sep-09	5.53%	4.19%	1.34%	Sep-13	4.80%	3.79%	1.01%							
Oct-01	7.63%	5.32%	2.31%	Oct-05	5.79%	Oct-09	5.55%	4.19%	1.36%	Oct-13	4.70%	3.68%	1.02%							
Nov-01	7.57%	5.12%	2.45%	Nov-05	5.88%	Nov-09	5.64%	4.31%	1.33%	Nov-13	4.77%	3.80%	0.97%							
Dec-01	7.83%	5.48%	2.35%	Dec-05	5.80%	Dec-09	5.79%	4.49%	1.30%	Dec-13	4.81%	3.89%	0.92%							
Jan-02	7.66%	5.45%	2.21%	Jan-06	5.75%	Jan-10	5.77%	4.60%	1.17%	Jan-14	4.63%	3.77%	0.86%							
Feb-02	7.54%	5.40%	2.14%	Feb-06	5.82%	Feb-10	5.87%	4.62%	1.25%	Feb-14	4.53%	3.66%	0.87%							
Mar-02	7.76%			Mar-06	5.98%	4.54%	1.28%	Mar-10	5.84%	4.64%	1.20%	Mar-14	4.51%	3.62%	0.89%					
Apr-02	7.57%			Apr-06	6.29%	5.06%	1.23%	Apr-10	5.81%	4.69%	1.12%	Apr-14	4.41%	3.52%	0.89%					
May-02	7.52%			May-06	6.42%	5.20%	1.22%	May-10	5.50%	4.29%	1.21%	May-14	4.26%	3.39%	0.87%					
Jun-02	7.42%			Jun-06	6.40%	5.15%	1.25%	Jun-10	5.46%	4.13%	1.33%	Jun-14	4.29%	3.42%	0.87%					
Jul-02	7.31%			Jul-06	6.37%	5.13%	1.24%	Jul-10	5.26%	3.99%	1.27%	Jul-14	4.23%	3.33%	0.90%					
Aug-02	7.17%			Aug-06	6.20%	5.00%	1.20%	Aug-10	5.01%	3.80%	1.21%	Aug-14	4.13%	3.20%	0.93%					
Sep-02	7.08%			Sep-06	6.00%	4.85%	1.15%	Sep-10	5.01%	3.77%	1.24%	Sep-14	4.24%	3.26%	0.98%					
Oct-02	7.23%			Oct-06	5.98%	4.85%	1.13%	Oct-10	5.10%	3.87%	1.23%	Oct-14	4.06%	3.04%	1.02%					
Nov-02	7.14%			Nov-06	5.80%	4.69%	1.11%	Nov-10	5.37%	4.19%	1.18%	Nov-14	4.09%	3.04%	1.05%					
Dec-02	7.07%			Dec-06	5.81%	4.68%	1.13%	Dec-10	5.56%	4.42%	1.14%	Dec-14	3.95%	2.83%	1.12%					

**Common Equity Risk Premiums**  
**Years 1926-2014**

	<b><u>Large Common Stocks</u></b>	<b><u>Long- Term Corp. Bonds</u></b>	<b><u>Equity Risk Premium</u></b>	<b><u>Long- Term Govt. Bonds Yields</u></b>
Low Interest Rates	12.21%	4.85%	7.36%	3.00%
Average Across All Interest Rates	12.07%	6.38%	5.69%	5.12%
High Interest Rates	11.93%	7.95%	3.98%	7.28%

Source of Information: Stocks, Bonds, Bills, and Inflation (S&B) 2015 Classic Yearbook

**Basic Series**  
**Annual Total Returns (except yields)**

<u>Year</u>	<u>Large Common Stocks</u>	<u>Long- Term Corp. Bonds</u>	<u>Long- Term Govt. Bonds Yields</u>
1940	-9.78%	3.39%	1.94%
1945	36.44%	4.08%	1.99%
1941	-11.59%	2.73%	2.04%
1949	18.79%	3.31%	2.09%
1946	-8.07%	1.72%	2.12%
1950	31.71%	2.12%	2.24%
1939	-0.41%	3.97%	2.26%
1948	5.50%	4.14%	2.37%
2014	13.69%	17.28%	2.40%
2012	16.00%	10.68%	2.41%
1947	5.71%	-2.34%	2.43%
1942	20.34%	2.60%	2.46%
1944	19.75%	4.73%	2.46%
1943	25.90%	2.83%	2.48%
2011	2.11%	17.95%	2.48%
1938	31.12%	6.13%	2.52%
1936	33.92%	6.74%	2.55%
1951	24.02%	-2.69%	2.69%
1954	52.62%	5.39%	2.72%
1937	-35.03%	2.75%	2.73%
1953	-0.99%	3.41%	2.74%
1935	47.67%	9.61%	2.76%
1952	18.37%	3.52%	2.79%
1934	-1.44%	13.84%	2.93%
1955	31.56%	0.48%	2.95%
2008	-37.00%	8.78%	3.03%
1932	-8.19%	10.82%	3.15%
1927	37.49%	7.44%	3.17%
1957	-10.78%	8.71%	3.23%
1930	-24.90%	7.98%	3.30%
1933	53.99%	10.38%	3.36%
1928	43.61%	2.84%	3.40%
1929	-8.42%	3.27%	3.40%
1956	6.56%	-6.81%	3.45%
1926	11.62%	7.37%	3.54%
2013	32.39%	-7.07%	3.67%
1960	0.47%	9.07%	3.80%
1958	43.36%	-2.22%	3.82%
1962	-8.73%	7.95%	3.95%
1931	-43.34%	-1.85%	4.07%
2010	15.06%	12.44%	4.14%
1961	26.89%	4.82%	4.15%
1963	22.80%	2.19%	4.17%
1964	16.48%	4.77%	4.23%
1959	11.96%	-0.97%	4.47%
1965	12.45%	-0.46%	4.50%
2007	5.49%	2.60%	4.50%
1966	-10.06%	0.20%	4.55%
2009	26.46%	3.02%	4.58%
2005	4.91%	5.87%	4.61%
2002	-22.10%	16.33%	4.84%
2004	10.88%	8.72%	4.84%
2006	15.79%	3.24%	4.91%
2003	28.68%	5.27%	5.11%
1998	28.58%	10.76%	5.42%
1967	23.98%	-4.95%	5.56%
2000	-9.10%	12.87%	5.58%
2001	-11.89%	10.65%	5.75%
1971	14.30%	11.01%	5.97%
1968	11.06%	2.57%	5.98%
1972	18.99%	7.26%	5.99%
1997	33.36%	12.95%	6.02%
1995	37.58%	27.20%	6.03%
1970	3.86%	18.37%	6.48%
1993	10.08%	13.19%	6.54%
1996	22.96%	1.40%	6.73%
1999	21.04%	-7.45%	6.82%
1969	-8.50%	-8.09%	6.87%
1976	23.93%	18.65%	7.21%
1973	-14.69%	1.14%	7.26%
1992	7.62%	9.39%	7.26%
1991	30.47%	19.89%	7.30%
1974	-26.47%	-3.06%	7.60%
1986	18.67%	19.85%	7.89%
1994	1.32%	-5.76%	7.99%
1977	-7.16%	1.71%	8.03%
1975	37.23%	14.64%	8.05%
1989	31.69%	16.23%	8.16%
1990	-3.10%	6.78%	8.44%
1978	6.57%	-0.07%	8.98%
1988	16.61%	10.70%	9.19%
1987	5.25%	-0.27%	9.20%
1985	31.73%	30.09%	9.56%
1979	18.61%	-4.18%	10.12%
1982	21.55%	42.56%	10.95%
1984	6.27%	16.86%	11.70%
1983	22.56%	6.26%	11.97%
1980	32.50%	-2.76%	11.99%
1981	-4.92%	-1.24%	13.34%

**Yields for Treasury Constant Maturities  
Yearly for 2010-2014  
and the Twelve Months Ended December 2015**

<u>Years</u>	<u>1-Year</u>	<u>2-Year</u>	<u>3-Year</u>	<u>5-Year</u>	<u>7-Year</u>	<u>10-Year</u>	<u>20-Year</u>	<u>30-Year</u>
2010	0.32%	0.70%	1.11%	1.93%	2.62%	3.22%	4.03%	4.25%
2011	0.18%	0.45%	0.75%	1.52%	2.16%	2.78%	3.62%	3.91%
2012	0.17%	0.28%	0.38%	0.76%	1.22%	1.80%	2.54%	2.92%
2013	0.13%	0.31%	0.54%	1.17%	1.74%	2.35%	3.12%	3.45%
2014	0.12%	0.46%	0.90%	1.64%	2.14%	2.54%	3.07%	3.34%
<b>Five-Year Average</b>	<u>0.18%</u>	<u>0.44%</u>	<u>0.74%</u>	<u>1.40%</u>	<u>1.98%</u>	<u>2.54%</u>	<u>3.28%</u>	<u>3.57%</u>
<b><u>Months</u></b>								
Jan-15	0.20%	0.55%	0.90%	1.37%	1.67%	1.88%	2.20%	2.46%
Feb-15	0.22%	0.62%	0.99%	1.47%	1.79%	1.98%	2.34%	2.57%
Mar-15	0.25%	0.64%	1.02%	1.52%	1.84%	2.04%	2.41%	2.63%
Apr-15	0.23%	0.54%	0.87%	1.35%	1.69%	1.94%	2.33%	2.59%
May-15	0.24%	0.61%	0.98%	1.54%	1.93%	2.20%	2.69%	2.96%
Jun-15	0.28%	0.69%	1.07%	1.68%	2.10%	2.36%	2.85%	3.11%
Jul-15	0.30%	0.67%	1.03%	1.63%	2.04%	2.32%	2.77%	3.07%
Aug-15	0.38%	0.70%	1.03%	1.54%	1.91%	2.17%	2.55%	2.86%
Sep-15	0.37%	0.71%	1.01%	1.49%	1.88%	2.17%	2.62%	2.95%
Oct-15	0.26%	0.64%	0.93%	1.39%	1.76%	2.07%	2.50%	2.89%
Nov-15	0.48%	0.88%	1.20%	1.67%	2.02%	2.26%	2.69%	3.03%
Dec-15	0.65%	0.98%	1.28%	1.70%	2.04%	2.24%	2.61%	2.97%
<b>Twelve-Month Average</b>	<u>0.32%</u>	<u>0.69%</u>	<u>1.03%</u>	<u>1.53%</u>	<u>1.89%</u>	<u>2.14%</u>	<u>2.55%</u>	<u>2.84%</u>
<b>Six-Month Average</b>	<u>0.41%</u>	<u>0.76%</u>	<u>1.08%</u>	<u>1.57%</u>	<u>1.94%</u>	<u>2.21%</u>	<u>2.62%</u>	<u>2.96%</u>
<b>Three-Month Average</b>	<u>0.46%</u>	<u>0.83%</u>	<u>1.14%</u>	<u>1.59%</u>	<u>1.94%</u>	<u>2.19%</u>	<u>2.60%</u>	<u>2.96%</u>

Source: Federal Reserve statistical release H.15

**Measures of the Risk-Free Rate & Corporate Bond Yields**

The forecast of Treasury and Corporate yields  
per the consensus of nearly 50 economists  
reported in the Blue Chip Financial Forecasts dated January 1, 2016

Year	Quarter	Treasury					Corporate	
		1-Year Bill	2-Year Note	5-Year Note	10-Year Note	30-Year Bond	Aaa Bond	Baa Bond
2016	First	0.7%	1.1%	1.8%	2.4%	3.1%	4.1%	5.4%
2016	Second	0.9%	1.3%	2.0%	2.6%	3.2%	4.3%	5.6%
2016	Third	1.2%	1.5%	2.2%	2.7%	3.4%	4.4%	5.7%
2016	Fourth	1.4%	1.7%	2.4%	2.9%	3.5%	4.7%	5.9%
2017	First	1.7%	2.0%	2.6%	3.0%	3.7%	4.8%	6.0%
2017	Second	1.9%	2.2%	2.8%	3.2%	3.8%	4.9%	6.1%

**Measures of the Market Premium**

Value Line Return

As of:	Dividend Yield	Median Appreciation Potential	Median Total Return
January 1, 2016	2.4%	+ 10.67%	= 13.07%

DCF Result for the S&P 500 Composite

D/P	( 1+.5g )	+	g	=	k
2.11%	( 1.0272 )	+	5.44%	=	7.61%

where:

Price (P)	at	31-Dec-15	=	2043.94
Dividend (D)	for	4th Qtr. '15	=	10.79
Dividend (D)		annualized	=	43.16
Growth (g)	by	First Call	=	5.44%

Summary

Value Line		13.07%
S&P 500		7.61%
Average		10.34%
Risk-free Rate of Return (Rf)		3.75%
Forecast Market Premium		6.59%
Historical Market Premium (Rm)	(Rf)	
1926-2014 Arith. mean	12.14%	4.06%
Average - Forecast/Historical		7.34%

This phenomenon can also be viewed graphically, as depicted in the Graph 7-2. The security market line is based on the pure CAPM without adjusting for the size premium. Based on the risk (or beta) of a security, the expected return should fluctuate along the security market line. However, the expected returns for the smaller deciles of the NYSE/AMEX/NASDAQ lie above the line, indicating that these deciles have had returns in excess of those appropriate for their systematic risk.

**Table 7-6:** Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Long-Term Returns in Excess of CAPM

Decile	Beta*	Arithmetic Mean Return (%)	Actual Return in Excess of Riskless Rate** (%)	CAPM Return in Excess of Riskless Rate <sup>1</sup> (%)	Size Premium (Return in Excess of CAPM) (%)
1	0.91	11.15	6.08	6.40	-0.32
2	1.04	12.96	7.89	7.24	0.65
3	1.10	13.71	8.64	7.70	0.94
4	1.13	14.01	8.93	7.88	1.05
5	1.16	14.84	9.76	8.11	1.65
6	1.19	15.01	9.94	8.31	1.63
7	1.24	15.53	10.46	8.69	1.77
8	1.30	16.35	11.27	9.10	2.18
9	1.35	17.13	12.06	9.42	2.64
10	1.40	20.62	15.54	9.82	5.72
Mid-Cap, 3-5	1.12	14.00	8.93	7.83	1.10
Low-Cap, 6-8	1.23	15.44	10.36	8.59	1.77
Micro-Cap, 9-10	1.36	18.26	13.18	9.49	3.69

Data from 1926–2014.

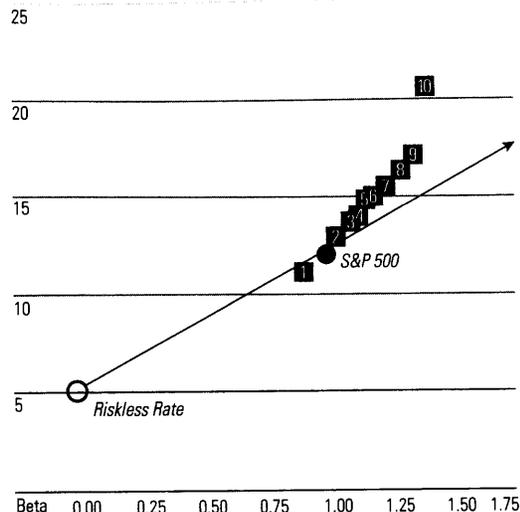
\*Betas are estimated from monthly returns in excess of the 30-day U.S. Treasury bill total return, January 1926–December 2014.

\*\*Historical riskless rate measured by the 89-year arithmetic mean income return component of 20-year government bonds (5.07%).

<sup>1</sup>Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.07%) minus the arithmetic mean income return component of 20-year government bonds (5.07%) from 1926–2014.

Source: Morningstar and CRSP. Calculated (or Derived) based on data from CRSP US Stock Database and CRSP US Indices Database ©2015 Center for Research in Security Prices (CRSP®), The University of Chicago Booth School of Business. Used with permission.

**Graph 7-2:** Security Market Line Versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ



Data from 1926–2014.

### Serial Correlation in Small-Cap Stock Returns

In four of the last 10 years, large-capitalization stocks (deciles 1-2 of NYSE/AMEX/NASDAQ) have outperformed small-capitalization stocks (deciles 9-10). This has led some market observers to speculate that there is no size premium. But statistical evidence suggests that periods of underperformance should be expected. For instance, large-cap stocks have outperformed small-cap stocks in nearly half of the years since 1926. It should be noted, however, that large-cap stocks' average historical outperformance has been less than the average historical outperformance of small-cap stocks.

History tells us that small companies are riskier than large companies. Table 7-1 [see page 100] shows the standard deviation (a measure of risk) for each decile of the NYSE/AMEX/NASDAQ. As one moves from larger to smaller deciles, the standard deviation of return grows. Investors are compensated for taking on this additional risk by the higher returns provided by small companies. It is important to note, however, that the risk/return profile is over the long term. If small companies did not provide higher long-term returns, investors would be more inclined to invest in the less-risky stocks of large companies.

**Comparable Earnings Approach**

Using Non-Utility Companies with  
Timeliness of 2, 3 & 4; Safety Rank of 1, 2 & 3; Financial Strength of B+, B++, A, A+ & A++;  
Price Stability of 85 to 100; Betas of .55 to .80; and Technical Rank of 1, 2 & 3

Company	Industry	Timeliness Rank	Safety Rank	Financial Strength	Price Stability	Beta	Technical Rank
Alleghany Corp	Insurance (Prop/Cas.)	3	1	A	100	0.80	3
AmerisourceBergen Corp	Med Supp Non-Invasive	2	1	A	95	0.80	1
Bristol Myers Squibb Co	Drug	3	1	A++	85	0.80	2
Capitol Federal Financial Inc	Thrift	3	2	B+	100	0.65	2
Church and Dwight Co Inc	Household Products	2	1	A+	100	0.70	3
Churchill Downs Inc	Hotel/Gaming	2	3	B+	85	0.80	3
Coca Cola Company	Beverage	3	1	A++	100	0.70	2
ConAgra Foods Inc	Food Processing	2	1	A	90	0.75	2
Costco Wholesale Corporation	Retail Store	2	1	A+	100	0.75	2
CR Bard Inc	Med Supp Invasive	2	1	A+	90	0.80	3
Eli Lilly and Co	Drug	2	1	A++	90	0.75	2
Erie Indemnity Company	Insurance (Prop/Cas.)	2	2	B++	95	0.80	3
General Mills Inc	Food Processing	2	1	A+	100	0.70	3
Johnson and Johnson	Med Supp Non-Invasive	2	1	A++	100	0.75	3
Kellogg Company	Food Processing	3	1	A	100	0.65	2
Kimberly Clark Corp	Household Products	2	1	A++	100	0.65	3
Lancaster Colony Corporation	Food Processing	2	1	A+	95	0.80	3
McCormick and Co	Food Processing	2	1	A+	100	0.80	2
McDonalds Corp	Restaurant	2	1	A++	100	0.70	3
Northwest Bancshares Inc	Thrift	3	2	B+	100	0.75	1
PepsiCo Inc	Beverage	3	1	A++	100	0.70	3
Philip Morris International Inc	Tobacco	3	2	B++	95	0.80	3
Pinnacle Foods Inc	Food Processing	2	3	B+	85	0.80	3
Republic Services Inc	Environmental	3	2	B++	95	0.80	3
Silgan Holdings Inc	Packaging & Container	3	3	B+	85	0.80	3
Sysco Corp	Retail/Wholesale Food	2	1	A+	100	0.70	2
TJX Companies Inc	Retail (Softlines)	2	1	A++	90	0.80	3
Weis Markets	Retail/Wholesale Food	3	1	A	85	0.75	3
WR Berkley Corp	Insurance (Prop/Cas.)	2	1	A	95	0.80	2
	Average	<u>2</u>	<u>1</u>	<u>A</u>	<u>95</u>	<u>0.75</u>	<u>3</u>
Electric Group	Average	<u>3</u>	<u>2</u>	<u>B++</u>	<u>99</u>	<u>0.70</u>	<u>1</u>

**Comparable Earnings Approach**

Five -Year Average Historical Earned Returns  
for Years 2010-2014 and  
Projected 3-5 Year Returns

Company	2010	2011	2012	2013	2014	Average	Projected 2018-20
Alleghany Corp	4.6%	4.9%	11.0%	7.1%	5.8%	6.7%	6.5%
AmerisourceBergen Corp	21.6%	24.6%	28.8%	31.9%	47.2%	30.8%	46.0%
Bristol Myers Squibb Co	19.8%	23.4%	14.4%	16.8%	13.4%	17.6%	25.5%
Capitol Federal Financial Inc	7.1%	3.3%	4.1%	4.2%	5.2%	17.6%	6.0%
Church and Dwight Co Inc	15.3%	15.9%	17.0%	17.1%	19.7%	4.8%	17.5%
Churchill Downs Inc	3.9%	10.4%	9.0%	7.8%	6.6%	17.0%	11.0%
Coca Cola Company	26.3%	28.2%	27.5%	28.3%	30.0%	7.5%	31.5%
ConAgra Foods Inc	15.8%	16.2%	17.3%	17.1%	17.5%	16.8%	23.0%
Costco Wholesale Corporation	12.1%	12.2%	14.1%	18.2%	16.7%	14.7%	20.0%
CR Bard Inc	32.8%	31.9%	29.4%	22.7%	36.1%	30.6%	22.0%
Eli Lilly and Co	42.2%	36.3%	25.6%	25.5%	19.4%	29.8%	32.0%
Erie Indemnity Company	17.8%	21.4%	24.9%	22.2%	24.0%	22.1%	29.0%
General Mills Inc	29.1%	26.0%	26.6%	26.8%	27.9%	27.3%	33.0%
Johnson and Johnson	23.5%	24.3%	22.1%	21.4%	23.4%	22.9%	20.0%
Kellogg Company	57.8%	69.9%	53.6%	38.9%	50.1%	54.1%	37.0%
Kimberly Clark Corp	31.1%	30.3%	35.1%	44.1%	NMF	35.2%	93.0%
Lancaster Colony Corporation	23.7%	20.6%	17.0%	21.8%	19.1%	20.4%	18.5%
McCormick and Co	24.4%	23.1%	24.0%	21.5%	24.4%	23.5%	22.5%
McDonalds Corp	33.9%	38.2%	35.7%	34.9%	37.0%	35.9%	80.0%
Northwest Bancshares Inc	4.4%	5.6%	5.6%	5.8%	5.8%	5.4%	8.0%
PepsiCo Inc	29.4%	30.5%	27.7%	28.1%	37.3%	30.6%	46.5%
Philip Morris International Inc	NMF	NMF	NMF	NMF	NMF	-	NMF
Pinnacle Foods Inc	-	NMF	5.9%	11.5%	11.9%	9.8%	14.0%
Republic Services Inc	8.4%	9.7%	8.6%	9.0%	9.0%	8.9%	10.0%
Silgan Holdings Inc	26.1%	29.4%	20.1%	26.0%	25.7%	25.5%	21.5%
Sysco Corp	30.9%	24.5%	23.9%	19.1%	17.7%	23.2%	25.0%
TJX Companies Inc	43.2%	48.0%	52.0%	48.6%	NMF	48.0%	35.5%
Weis Markets	9.4%	10.1%	10.4%	9.1%	6.4%	9.1%	7.5%
WR Berkley Corp	11.4%	7.7%	8.8%	9.7%	10.6%	9.6%	10.0%
Average						<u>21.6%</u>	<u>26.9%</u>
Median						<u>21.3%</u>	<u>22.3%</u>
Average (excluding companies with values >20%)						<u>11.2%</u>	<u>10.9%</u>

### **Comparable Earnings Approach**

#### Screening Parameters

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##### Timeliness Rank

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The rank for a stock's probable relative market performance in the year ahead. Stocks ranked 1 (Highest) or 2 (Above Average) are likely to outpace the year-ahead market. Those ranked 4 (Below Average) or 5 (Lowest) are not expected to outperform most stocks over the next 12 months. Stocks ranked 3 (Average) will probably advance or decline with the market in the year ahead. Investors should try to limit purchases to stocks ranked 1 (Highest) or 2 (Above Average) for Timeliness.

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##### Safety Rank

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A measure of potential risk associated with individual common stocks rather than large diversified portfolios (for which Beta is good risk measure). Safety is based on the stability of price, which includes sensitivity to the market (see Beta) as well as the stock's inherent volatility, adjusted for trend and other factors including company size, the penetration of its markets, product market volatility, the degree of financial leverage, the earnings quality, and the overall condition of the balance sheet. Safety Ranks range from 1 (Highest) to 5 (Lowest). Conservative investors should try to limit purchases to equities ranked 1 (Highest) or 2 (Above Average) for Safety.

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##### Financial Strength

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The financial strength of each of the more than 1,600 companies in the VS II data base is rated relative to all the others. The ratings range from A++ to C in nine steps. (For screening purposes, think of an A rating as "greater than" a B). Companies that have the best relative financial strength are given an A++ rating, indicating ability to weather hard times better than the vast majority of other companies. Those who don't quite merit the top rating are given an A+ grade, and so on. A rating as low as C++ is considered satisfactory. A rating of C+ is well below average, and C is reserved for companies with very serious financial problems. The ratings are based upon a computer analysis of a number of key variables that determine (a) financial leverage, (b) business risk, and (c) company size, plus the judgment of Value Line's analysts and senior editors regarding factors that cannot be quantified across-the-board for companies. The primary variables that are indexed and studied include equity coverage of debt, equity coverage of intangibles, "quick ratio", accounting methods, variability of return, fixed charge coverage, stock price stability, and company size.

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##### Price Stability Index

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An index based upon a ranking of the weekly percent changes in the price of the stock over the last five years. The lower the standard deviation of the changes, the more stable the stock. Stocks ranking in the top 5% (lowest standard deviations) carry a Price Stability Index of 100; the next 5%, 95; and so on down to 5. One standard deviation is the range around the average weekly percent change in the price that encompasses about two thirds of all the weekly percent change figures over the last five years. When the range is wide, the standard deviation is high and the stock's Price Stability Index is low.

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##### Beta

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A measure of the sensitivity of the stock's price to overall fluctuations in the New York Stock Exchange Composite Average. A Beta of 1.50 indicates that a stock tends to rise (or fall) 50% more than the New York Stock Exchange Composite Average. Use Beta to measure the stock market risk inherent in any diversified portfolio of, say, 15 or more companies. Otherwise, use the Safety Rank, which measures total risk inherent in an equity, including that portion attributable to market fluctuations. Beta is derived from a least squares regression analysis between weekly percent changes in the price of a stock and weekly percent changes in the NYSE Average over a period of five years. In the case of shorter price histories, a smaller time period is used, but two years is the minimum. The Betas are periodically adjusted for their long-term tendency to regress toward 1.00.

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##### Technical Rank

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A prediction of relative price movement, primarily over the next three to six months. It is a function of price action relative to all stocks followed by Value Line. Stocks ranked 1 (Highest) or 2 (Above Average) are likely to outpace the market. Those ranked 4 (Below Average) or 5 (Lowest) are not expected to outperform most stocks over the next six months. Stocks ranked 3 (Average) will probably advance or decline with the market. Investors should use the Technical and Timeliness Ranks as complements to one another.

# NOTICE TO PUBLIC SERVICE ELECTRIC AND GAS COMPANY ELECTRIC CUSTOMERS

## IN THE MATTER OF THE PETITION OF PUBLIC SERVICE ELECTRIC AND GAS COMPANY FOR APPROVAL OF A SECOND EXTENSION OF A SOLAR GENERATION INVESTMENT PROGRAM AND 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, N.J.S.A. 48:2-21.1 AND N.J.S.A. 48:3-98.1

### Notice of a Filing

#### BPU Docket No. XXXXXXXXXX

**TAKE NOTICE** that, Public Service Electric and Gas Company (Public Service, PSE&G, the Company) filed a Petition with the New Jersey Board of Public Utilities (Board, BPU) in May 2016 requesting approval to extend the current PSE&G Solar Generation Investment Extension Program, through the addition of 100 megawatts (MW) of solar capacity to New Jersey's renewable portfolio over four years under a program entitled Solar Generation Investment Extension Program II (Program). The Program will be comprised of a single segment that will expand on the development of solar installations on landfills and brownfields in the State of New Jersey, originally initiated and approved by the Board.

PSE&G seeks BPU approval to invest approximately \$240 million over a five-year period that will allow PSE&G to continue in the critical role in meeting the State's renewable energy goals through the development of solar systems consistent with the solar energy directives set forth in New Jersey's Energy Master Plan and the Solar Act. Additionally the Company is requesting approval of \$36 million for risk and contingency which includes unforeseen site conditions as well as approximately \$20 million to operate and maintain the systems placed in service. Approval of this filing would initially increase rates to be paid by the Company's electric customers by \$0.8 million over a 12 month period.

PSE&G proposes to recover all Program costs through a new separate component of the electric Green Programs Recovery Charge (GPRC) entitled Solar Generation Investment Extension II Program (SGIEIIP). The SGIEIIP component will be applicable to all electric rate schedules. The component would be reviewed and modified in an annual filing.

The Company is requesting that any over/under recovery of actual revenue requirements compared to revenues would be deferred. In calculating the monthly interest on net over and under recoveries, the interest rate would be based upon the Company's interest rate obtained on its commercial paper and/or bank credit lines utilized in the preceding month. The

proposed electric GPRC, if approved by the Board, is shown in Table #1.

Table #2 provides customers with the approximate net effect of the proposed increase in rates relating to the SGIEIIP, if approved by the Board. The annual percentage increase applicable to specific customers will vary according to the applicable rate schedule and the level of the customer's usage. The approximate effect of the proposed increase on typical electric residential monthly bills, if approved by the Board, is illustrated in Table # 3.

Based on the filing, a typical residential electric customer using 750 kilowatt-hours per summer month and 7,200 kilowatt-hours on an annual basis would see an initial increase in the annual bill from \$1,243.92 to \$1,244.08, or \$0.16 or approximately 0.01% based on Delivery Rates and Basic Generation Service Residential Small Commercial Pricing [BGS-RSCP] charges in effect May 7, 2016 and assuming that the customer receives BGS-RSCP service from PSE&G.

The Board has the statutory authority pursuant to N.J.S.A. 48:2-21, to establish the GPRC to levels it finds just and reasonable and adjust the Company's tariffs as appropriate. Therefore, the Board may establish the GPRC at a level other than that proposed by Public Service. Therefore, the described charges may increase or decrease based upon the Board's decision.

Copies of the Company's filing are available for review at the Company's Customer Service Centers, online at the PSEG Web site at <http://www.pseg.com/pseandgfilings> and at the Board of Public Utilities, 44 South Clinton Avenue, Seventh Floor, Trenton, New Jersey 08625-0350.

**Table #1  
GPRC Charges**

	Solar Generation Investment Extension Program II Component of the GPRC		Total GPRC	
	Present (Incl. SUT)	Proposed (Incl. SUT)	Present (Incl. SUT)	Proposed (Incl. SUT)
GPRC Electric - \$ per kWhr	\$0.000000	\$0.000021	\$0.001484	\$0.001505

**Table #2  
Impact By Electric Customer Class**

PROPOSED PERCENTAGE INCREASES BY CUSTOMER CLASS FOR ELECTRIC SERVICE		
	Rate Class	% Increase
Residential	RS	0.01%
Residential Heating	RHS	0.02
Residential Load Management	RLM	0.01
General Lighting & Power	GLP	0.01
Large Power & Lighting - Secondary	LPL-S	0.02
Large Power & Lighting – Primary	LPL-P	0.02
High Tension – Subtransmission	HTS-S	0.02

The percent increases noted above are based upon Delivery Rates and the applicable Basic Generation Service (BGS) charges in effect May 7, 2016 and assumes that customers receive commodity service from Public Service Electric and Gas Company.

**Table #3  
Residential Electric Service**

If Your Annual kWhr Use Is:	And Your Monthly Summer kWhr Use Is:	Then Your Present Monthly Summer Bill (1) Would Be:	And Your Proposed Monthly Summer Bill (2) Would Be:	Your Monthly Summer Bill Increase Would Be:	And Your Monthly Percent Increase Would Be:
1,920	200	\$36.58	\$36.58	\$0.00	0.00%
4,320	450	79.26	79.27	0.01	0.01
7,200	750	132.54	132.56	0.02	0.02
7,800	803	142.31	142.33	0.02	0.01
13,160	1,360	245.05	245.08	0.03	0.01

- (1) Based upon current Delivery Rates and Basic Generation Service Residential Small Commercial Pricing (BGS-RSCP) charges in effect May 7, 2016 and assumes that the customer receives BGS-RSCP service from Public Service Electric and Gas Company.
- (2) Same as (1) except includes the Solar Generation Investment Extension Program II component of the Green Programs Recovery Charge.

**Matthew M. Weissman  
General Regulatory Counsel - Rates**

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**

# NOTICE TO PUBLIC SERVICE ELECTRIC AND GAS COMPANY ELECTRIC CUSTOMERS

## IN THE MATTER OF THE PETITION OF PUBLIC SERVICE ELECTRIC AND GAS COMPANY FOR APPROVAL OF A SECOND EXTENSION OF A SOLAR GENERATION INVESTMENT PROGRAM AND 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, N.J.S.A. 48:2-21.1 AND N.J.S.A. 48:3-98.1

### Notice of Filing And Notice of Public Hearings

#### BPU Docket No. XXXXXXXXXX

**TAKE NOTICE** that, Public Service Electric and Gas Company (Public Service, PSE&G, the Company) filed a Petition with the New Jersey Board of Public Utilities (Board, BPU) in May 2016 requesting approval to extend the current PSE&G Solar Generation Investment Extension Program, through the addition of 100 megawatts (MW) of solar capacity to New Jersey's renewable portfolio over four years under a program entitled Solar Generation Investment Extension Program II (Program). The Program will be comprised of a single segment that will expand on the development of solar installations on landfills and brownfields in the State of New Jersey, originally initiated and approved by the Board.

PSE&G seeks BPU approval to invest approximately \$240 million over a five-year period that will allow PSE&G to continue in the critical role in meeting the State's renewable energy goals through the development of solar systems consistent with the solar energy directives set forth in New Jersey's Energy Master Plan and the Solar Act. Additionally the Company is requesting approval of \$36 million for risk and contingency which includes unforeseen site conditions as well as approximately \$20 million to operate and maintain the systems placed in service. Approval of this filing would initially increase rates to be paid by the Company's electric customers by \$0.8 million over a 12 month period.

PSE&G proposes to recover all Program costs through a new separate component of the electric Green Programs Recovery Charge (GPRC) entitled Solar Generation Investment Extension II Program (SGIEIIP). The SGIEIIP component will be applicable to all electric rate schedules. The component would be reviewed and modified in an annual filing.

The Company is requesting that any over/under recovery of actual revenue requirements compared to revenues would be deferred. In calculating the monthly interest on net over and under recoveries, the interest rate would be based upon the Company's interest rate obtained on its commercial paper and/or bank credit lines utilized in the preceding month. The proposed electric GPRC, if approved by the Board, is shown in Table #1.

Table #2 provides customers with the approximate net effect of the proposed increase in rates relating to the SGIEIIP, if approved by the Board. The annual percentage increase applicable to specific customers will vary according to the applicable rate schedule and the level of the customer's usage. The approximate effect of the proposed increase on typical electric residential monthly bills, if approved by the Board, is illustrated in Table # 3.

Based on the filing, a typical residential electric customer using 750 kilowatt-hours per summer month and 7,200 kilowatt-hours on an annual basis would see an initial increase in the annual bill from \$1,243.92 to \$1,244.08, or \$0.16 or approximately 0.01% based on Delivery Rates and Basic Generation Service Residential Small Commercial Pricing [BGS-RSCP] charges in effect May 7, 2016 and assuming that the customer receives BGS-RSCP service from PSE&G.

The Board has the statutory authority pursuant to N.J.S.A. 48:2-21, to establish the GPRC to levels it finds just and reasonable and adjust the Company's tariffs as appropriate. Therefore, the Board may establish the GPRC at a level other than that proposed by Public Service. Therefore, the described charges may increase or decrease based upon the Board's decision.

Copies of the Company's filing are available for review at the Company's Customer Service Centers, online at the PSEG Web site at <http://www.pseg.com/pseandgfilings> and at the Board of Public Utilities, 44 South Clinton Avenue, Seventh Floor, Trenton, New Jersey 08625-0350.

The following dates, times and locations for public hearings have been scheduled on the Company's filing so that members of the public may present their views. Information provided at the public hearings will become part of the record of this case and will be considered by the Board in making its decision.

Date 1, 2016	Date 2, 2016	Date 3, 2016
Time 1	Time 2	Time 3
Location 1	Location 2	Location 3
Location 1 Overflow	Location 2 Overflow	Location 3 Overflow
Room 1	Room 2	Room 3
Room 1 Overflow	Room 2 Overflow	Room 3 Overflow
Address 1	Address 1	Address 1
City 1, New Jersey Zip 1	City 2, New Jersey Zip 2	City 3, New Jersey Zip 3

In order to encourage full participation in this opportunity for public comment, please submit any requests for needed accommodations, such as interpreters, listening devices or mobility assistance, no less than 48 hours prior to the above hearings to the Board's Secretary at the following address.

Customers may file written comments with the Secretary of the Board of Public Utilities at 44 South Clinton Avenue, 3<sup>rd</sup> Floor, Suite 314, P.O. Box 350, Trenton, New Jersey, 08625-0350 ATTN: Secretary Irene Kim Asbury whether or not they attend the public hearings. To review PSE&G's rate filing, visit <http://www.pseg.com/pseandgfilings>.

**Table #1  
GPRC Charges**

	Solar Generation Investment Extension Program II Component of the GPRC		Total GPRC	
	Present (Incl. SUT)	Proposed (Incl. SUT)	Present (Incl. SUT)	Proposed (Incl. SUT)
<b>GPRC Electric - \$ per kWhr</b>	<b>\$0.000000</b>	<b>\$0.000021</b>	<b>\$0.001484</b>	<b>\$0.001505</b>

**Table #2  
Impact By Electric Customer Class**

PROPOSED PERCENTAGE INCREASES BY CUSTOMER CLASS FOR ELECTRIC SERVICE		
	Rate Class	% Increase
Residential	RS	0.01%
Residential Heating	RHS	0.02
Residential Load Management	RLM	0.01
General Lighting & Power	GLP	0.01
Large Power & Lighting - Secondary	LPL-S	0.02
Large Power & Lighting – Primary	LPL-P	0.02
High Tension – Subtransmission	HTS-S	0.02

The percent increases noted above are based upon Delivery Rates and the applicable Basic Generation Service (BGS) charges in effect May 7, 2016 and assumes that customers receive commodity service from Public Service Electric and Gas Company.

**Table #3  
Residential Electric Service**

If Your Annual kWhr Use Is:	And Your Monthly Summer kWhr Use Is:	Then Your Present Monthly Summer Bill (1) Would Be:	And Your Proposed Monthly Summer Bill (2) Would Be:	Your Monthly Summer Bill Increase Would Be:	And Your Monthly Percent Increase Would Be:
1,920	200	\$36.58	\$36.58	\$0.00	0.00%
4,320	450	79.26	79.27	0.01	0.01
7,200	750	132.54	132.56	0.02	0.02
7,800	803	142.31	142.33	0.02	0.01
13,160	1,360	245.05	245.08	0.03	0.01

- (1) Based upon current Delivery Rates and Basic Generation Service Residential Small Commercial Pricing (BGS-RSCP) charges in effect May 7, 2016 and assumes that the customer receives BGS-RSCP service from Public Service Electric and Gas Company.
- (2) Same as (1) except includes the Solar Generation Investment Extension Program II component of the Green Programs Recovery Charge.

**Matthew M. Weissman**  
General Regulatory Counsel - Rates

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**

**XXX Revised Sheet No. 65**

**B.P.U.N.J. No. 15 ELECTRIC**

**Superseding**

**XXX Revised Sheet No. 65**

**GREEN PROGRAMS RECOVERY CHARGE**

**Charge  
(per kilowatthour)**

**Component:**

Carbon Abatement Program .....	\$ 0.000065
Energy Efficiency Economic Stimulus Program.....	\$ 0.000256
Demand Response Program .....	(\$ 0.000054)
Solar Generation Investment Program .....	\$ 0.000319
Solar Loan II Program .....	\$ 0.000189
Energy Efficiency Economic Extension Program.....	\$ 0.000337
Solar Generation Investment Extension Program .....	\$ 0.000185
Solar Loan III Program .....	\$ 0.000038
Energy Efficiency Economic Extension Program II.....	\$ 0.000052
<u>Solar Generation Investment Extension II Program .....</u>	<u>\$ 0.000020</u>
Sub-total per kilowatthour .....	\$ <u>0.0013870.001407</u>
Charge including New Jersey Sales and Use Tax (SUT) .....	\$ <u>0.0014840.001505</u>

**GREEN PROGRAMS RECOVERY CHARGE**

This charge is designed to recover the revenue requirements associated with the PSE&G Green Programs. The charge will be reset nominally on an annual basis. Interest at the weighted average of the interest rates on PSE&G's commercial paper and bank credit lines utilized in the prior month will be accrued monthly on any under- or over- recovered balances. The interest rates shall be reset each month.

Date of Issue:

Issued by SCOTT S. JENNINGS, Vice President Finance – PSE&G  
80 Park Plaza, Newark, New Jersey 07102  
Filed pursuant to Order of Board of Public Utilities dated  
in Docket No.

Effective:

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY**

**XXX Revised Sheet No. 65**

**B.P.U.N.J. No. 15 ELECTRIC**

**Superseding**

**XXX Revised Sheet No. 65**

**GREEN PROGRAMS RECOVERY CHARGE**

**Charge  
(per kilowatthour)**

**Component:**

Carbon Abatement Program .....	\$ 0.000065
Energy Efficiency Economic Stimulus Program.....	\$ 0.000256
Demand Response Program .....	(\$ 0.000054)
Solar Generation Investment Program .....	\$ 0.000319
Solar Loan II Program .....	\$ 0.000189
Energy Efficiency Economic Extension Program.....	\$ 0.000337
Solar Generation Investment Extension Program .....	\$ 0.000185
Solar Loan III Program .....	\$ 0.000038
Energy Efficiency Economic Extension Program II.....	\$ 0.000052
Solar Generation Investment Extension II Program .....	\$ <u>0.000020</u>
Sub-total per kilowatthour .....	\$ 0.001407

Charge including New Jersey Sales and Use Tax (SUT) ..... \$ 0.001505

**GREEN PROGRAMS RECOVERY CHARGE**

This charge is designed to recover the revenue requirements associated with the PSE&G Green Programs. The charge will be reset nominally on an annual basis. Interest at the weighted average of the interest rates on PSE&G's commercial paper and bank credit lines utilized in the prior month will be accrued monthly on any under- or over- recovered balances. The interest rates shall be reset each month.

Date of Issue:

Issued by SCOTT S. JENNINGS, Vice President Finance – PSE&G  
80 Park Plaza, Newark, New Jersey 07102  
Filed pursuant to Order of Board of Public Utilities dated  
in Docket No.

Effective:

## TYPICAL RESIDENTIAL ELECTRIC BILL IMPACTS

The effect of the proposed changes in the Solar Generation Investment Extension II Program component of the electric Green Programs Recovery Charge (GPRC) on typical residential electric bills, if approved by the Board, is illustrated below:

<b>Residential Electric Service</b>					
If Your Monthly Summer kWhr Use Is:	And Your Annual kWhr Use Is:	Then Your Present Annual Bill (1) Would Be:	And Your Proposed Annual Bill (2) Would Be:	Your Annual Bill Change Would Be:	And Your Percent Change Would Be:
200	1,920	\$350.96	\$350.96	\$0.00	0.00%
450	4,320	753.12	753.16	0.04	0.01
750	7,200	1,243.92	1,244.08	0.16	0.01
803	7,800	1,347.19	1,347.35	0.16	0.01
1,360	13,160	2,275.80	2,276.08	0.28	0.01

- (1) Based upon current Delivery Rates and Basic Generation Service Residential Small Commercial pricing (BGS-RSCP) charges in effect May 7, 2016 and assumes that the customer receives BGS-RSCP service from Public Service.
- (2) Same as (1) except includes changes in the Solar Generation Investment Extension II Program component of the GPRC.

<b>Residential Electric Service</b>					
If Your Annual kWhr Use Is:	And Your Monthly Summer kWhr Use Is:	Then Your Present Monthly Summer Bill (3) Would Be:	And Your Proposed Monthly Summer Bill (4) Would Be:	Your Monthly Summer Bill Change Would Be:	And Your Percent Change Would Be:
1,920	200	\$36.58	\$36.58	\$0.00	0.00%
4,320	450	79.26	79.27	0.01	0.01
7,200	750	132.54	132.56	0.02	0.02
7,800	803	142.31	142.33	0.02	0.01
13,160	1,360	245.05	245.08	0.03	0.01

- (3) Based upon current Delivery Rates and Basic Generation Service Residential Small Commercial Pricing (BGS-RSCP) charges in effect May 7, 2016 and assumes that the customer receives BGS-RSCP service from Public Service.
- (4) Same as (3) except includes changes in the Solar Generation Investment Extension II Program component of the GPRC.