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Docket NO. 12-526

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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE

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DELAWARE P.S.C.

IN THE MATTER OF THE APPLICATION)
OF DELMARVA POWER AND LIGHT) PSC DOCKET NO.
COMPANY FOR APPROVAL OF THE 2013)
PROGRAM FOR THE PROCUREMENT OF)
SOLAR RENEWABLE ENERGY CREDITS)

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Ruth
Guang

**DELMARVA POWER AND LIGHT COMPANY'S APPLICATION
FOR APPROVAL OF THE 2013 PROGRAM FOR THE
PROCUREMENT OF SOLAR RENEWABLE ENERGY CREDITS**

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Dated: November 20, 2012

Delmarva Power & Light Company (“Delmarva Power” or “Delmarva”), through its undersigned counsel, hereby submits this application pursuant to 26 *Del. C.* § 351 *et seq.* for approval by the Delaware Public Service Commission (the “Commission”) of the attached 2013 Program for the Procurement of Solar Renewable Energy Credits (the “2013 Program”) developed by the Renewable Energy Taskforce, of which Delmarva Power is a member.¹ In support of this application, Delmarva Power states as follows:

I. Legislative Background

1. In 2007, the Governor approved and signed into law the Renewable Energy Portfolio Standards Act, 26 *Del. C.* §§ 351-364, (“REPSA”), the purpose of which was to “establish a market for electricity from [renewable energy resources] in Delaware, and to lower the cost to consumers of electricity from these resources.” 26 *Del. C.* § 351(c). REPSA also recognized that having a market for renewable energy resources in Delaware would benefit the State through “improved regional and local air quality, improved public health, increased electric supply diversity, increased protection against price volatility and supply disruption, improved transmission and distribution performance, and new economic development opportunities.” 26 *Del. C.* § 351(b).

2. In furtherance of these goals, REPSA requires retail electricity suppliers, such as Delmarva Power, to purchase energy from Eligible Energy Resources (as that term is defined in REPSA) to meet a portion of their annual retail load. Beginning with compliance year 2010, REPSA sets forth the minimum percentage of retail energy sales to end-users that must come from Eligible Energy Resources, including solar photovoltaics. 26 *Del. C.* § 354(a). The

¹ As the only current electric supplier participating in the SREC auction process, Delmarva has submitted the 2013 Program to the Commission for approval. However, the 2013 Program is presented by and supported by the Renewable Energy Taskforce.

percentage of retail energy to be supplied from Eligible Energy Resources increases over time, reaching a requirement of 25% in 2025. *Id.*

3. REPSA was amended in 2010 to require the formation of the Renewable Energy Taskforce (the “Taskforce”) for the purpose of “making recommendations about the establishment of trading mechanisms and other structures to support the growth of renewable energy markets in Delaware.” 26 *Del. C.* § 360(d). The Taskforce was required to include the following members: (i) four appointments by the Secretary of DNREC; (ii) one appointment by the Public Service Commission; (iii) one appointment by Delmarva Power & Light; (iv) one appointment by the Delaware Electric Cooperative; (v) one appointment by municipal electric companies; (vi) one appointment by the Sustainable Energy utility (“SEU”); (vii) one appointment by the Delaware Public Advocate; and (viii) one appointment by the Delaware Solar Energy Coalition. 26 *Del. C.* § 360(d)(1).

4. The Taskforce was charged with making recommendations about and reporting on, *inter alia*, the following:

- a. Establishing a balanced market mechanism for Renewable Energy Credit (“REC”) and Solar Renewable Energy Credit (“SREC”) trading;
- b. Establishing REC and SREC aggregation mechanisms and other devices to encourage the deployment of solar energy technologies in Delaware with the least impact on retail electricity suppliers, municipal electric companies and rural electric cooperatives;
- c. Minimizing the cost for complying with REPSA;

- d. Establishing revenue certainty for appropriate investment in solar renewable energy technologies, including consideration of long-term contracts and auction mechanisms;
- e. Establishing mechanisms to maximize in-state solar renewable energy generation and local manufacturing; and
- f. Ensuring that residential, commercial and utility scale photovoltaic and solar thermal systems of various sizes are financially viable and cost-effective instruments in Delaware.

II. The Pilot Program and Evaluation of the Pilot Program

5. The Taskforce first met on September 2, 2010 and, through a subcommittee, worked for almost a year to development a Pilot Program for the Procurement of Solar Renewable Energy Credits (the "Pilot Program"). The Pilot Program was designed as a 1-year program to be re-evaluated each year to see if it was meeting the goals of REPSA effectively.

6. On September 16, 2011, Delmarva filed an Application with the Commission seeking approval of the Pilot Program. The Commission held an evidentiary hearing on November 8, 2011, and approved the Pilot Program with certain modifications. On December 20, 2011, the Commission issued Final Findings, Opinion and Order No. 8093 (the "Commission Order"), setting forth the reasons for its approval of the Pilot Program with modifications.

7. The Commission Order provided for the Commission to retain a consultant to evaluate whether long-term SREC contracting should continue. In addition, the Commission Order set forth certain criteria to use in evaluating the Pilot Program. (Order No. 8093 at Ex. B).

8. In accordance with the Commission Order, the Commission retained the Meister Consultants Group ("Meister") to evaluate the Pilot Program. Meister produced a report on

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November 20, 2012

BY HAND DELIVERY

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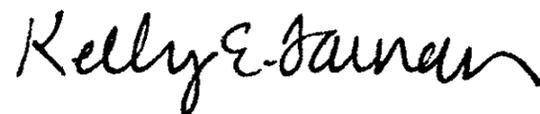
**Re: Application for Approval of the 2013 Program for the Procurement of
Solar Renewable Energy Credits**

Dear Secretary Bentley:

Enclosed please find the original and ten copies of: (i) Delmarva Power & Light Company's ("Delmarva") Application for Approval of the 2013 Program for the Procurement of Solar Renewable Energy Credits and (ii) Delmarva's Report in Support of its Application for Approval of the 2013 Program for the Procurement of Solar Renewable Energy Credits. I have also included a check in the amount of \$150.00 to cover the filing fee. As noted in the Petition, Delmarva respectfully requests that the Application be heard by the Commission on an expedited basis.

If you have any questions or concerns regarding the enclosed, please do not hesitate to contact me.

Respectfully,



Kelly E. Farnan

Enclosures

■ ■ ■

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**DELMARVA POWER AND LIGHT COMPANY'S REPORT IN
SUPPORT OF ITS APPLICATION FOR APPROVAL OF THE 2013
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Dated: November 20, 2012

1. Delmarva Power & Light Company (“Delmarva Power” or “Delmarva”) has concurrently herewith filed its Application for the Approval of the 2013 Program for the Procurement of Solar Renewable Energy Credits (the “Application”).

2. As indicated in the Application, the 2013 Program for the Procurement of Solar Renewable Energy Credits (the “2013 Program”) was developed by the Renewable Energy Taskforce (the “Taskforce”). The 2013 Program is based upon the Pilot Program for the Procurement of Solar Renewable Energy Credits (the “Pilot Program”) as approved by Order No. 8093 of the Public Service Commission (the “Commission”).

3. The Application provided background on the 2013 Program and highlighted the key terms of the 2013 Program. While the Application fairly lays out the 2013 Program and its purpose, the Commission may also wish to consider the following information in connection with the Application: (i) the key inputs to the 2013 Program; (ii) ways in which the 2013 Program differs from the Pilot Program; (iii) rationale for the separate tiers; (iv) rationale for allowing competitive bidding in all tiers; (v) rationale for continuing the SEU’s involvement in the 2013 Program; and (vi) rationale for seeking expedited treatment. While the 2013 Program was developed with the full participation of the Taskforce, Delmarva Power submits this report and anticipates that other members of the Taskforce will join in certain of Delmarva Power’s positions as appropriate. To the extent necessary, either a representative from Delmarva Power or the Taskforce will be available to testify to any of the issues discussed in this report.

4. Accordingly, in advance of the evidentiary hearing to be scheduled on the Application, Delmarva Power respectfully submits the following additional information to be considered by the Commission in connection with the Application:

A. Key Inputs to the 2013 Program

As required by Commission Order No. 8093, Commission Staff engaged a consultant to review the results of the Pilot Program. Staff selected Meister Consultants Group, which prepared an Evaluation of the Delaware SREC Pilot Program dated August 3, 2012 (the "Meister Report"). The analysis and conclusions contained in the Meister Report was considered by the Taskforce in developing the 2013 Program. In particular, the Mesiter Report identified four (4) specific options the Taskforce might consider in developing the 2013 Program: (1) Reducing the total number of solicitation tiers; (2) Exploring the use of an auction-based solicitation for the Pilot Program Tier 2A; (3) Setting administratively-set process as a function of the competitive solicitation tiers; and (4) Developing a solicitation specifically for existing systems that are unable to access the SREC market. (Meister Report p. 6). As discussed below, each of these suggestions was implemented in whole or in part in the 2013 Program.

In addition, the Taskforce has continued to meet on a monthly basis to consider issues related to the SREC Auction process and to discuss ideas for the 2013 Program. Each of those meetings was open to the public and the Taskforce had the opportunity to consider a wide variety of viewpoints from within the Taskforce and otherwise.

B. Comparison to Pilot Program

In many respects, the Pilot Program and the 2013 Program are largely similar. The primary changes are: (i) requiring auctions by tier for new systems and existing systems separately; (ii) requiring competitive bidding in all tiers; and (iii) giving Delmarva Power the ability to make spot purchases. Each of these changes is discussed below.

The Taskforce will continue to use long-term (20 year) contracts with all Owners who submit a successful bid in the auction. The key terms of those long-term contracts (attached as Appendix B to the 2013 Program) have not changed. The primary change is that the SREC price for the first 7 years of the contract will be the auction price and then will be a set at \$50 per SREC for the remaining 13 years of the contract.

It is the view of the Taskforce that keeping many of the terms of the auction and the long-term contracts the same allows the ability to better study the market from year to year and also decreases public confusion over the process and the programs. Furthermore, given that 84% of all capacity entering the Pilot Program solicitation claimed the Delaware workforce bonus, and 68% of all capacity entering the Pilot Program solicitation claimed the Delaware manufactured equipment bonus, it was important to maintain those aspects of the Pilot Program as part of the 2013 Program. (Meister Report p. 72). Accordingly, the goal of the Taskforce was to identify ways in which the Pilot Program could be improved without creating an entirely new process and procedure.

C. Rationale for Separate Tiers in the 2013 Program

A tiered system was selected in the Pilot Program as the method of meeting the Renewable Energy Portfolio Standards Act (“REPSA”) requirement of “[e]nsuring that residential, commercial, and utility scale photovoltaic systems of various sizes are financially viable and cost effective investments in Delaware.” The Taskforce concluded that a tiered system, with certain modifications, should continue to be used. As the Meister Report noted, the competing goals of REPSA (i.e. to both facilitate a broad market for SRECs and minimize customer bill impact) require a balanced approach. (Meister Report at p. 20). The Meister Report confirmed that, as expected, each tier was oversubscribed in the Pilot Program. This

confirms that there was healthy participation in each tier and that a tiered approach ensures a good balance across system sizes. While noting the healthy participation, the Meister Report did recommend that the Taskforce consider reducing the total number of solicitation tiers. (Meister Report p. 6). While the 2013 Program has a total of 5 Tiers, it has only 3 Tiers in the solicitations for New Systems, which is a group comparable to the group in the Pilot Program.

As with the Pilot Program, the 2013 Program again requires a balance of different system sizes. The balanced approach allows a diverse solar market to develop in Delaware while providing some level of cost protection to the ratepayers.

For the 2013 Program, the Tiers are further broken down for New Systems and Existing Systems, with separate auctions for each. This, too, furthers the goal of a balanced solar market in Delaware. Allowing separate bidding for New Systems encourages the continued expansion of solar installations in Delaware. In addition, the 2013 Program continues to provide credits for systems that are built with parts made in Delaware or by using a Delaware-based workforce.

Finally, in addition to the bidding tiers, the 2013 Program allows for Delmarva Power to purchase a small percentage of its required SREC through spot market purchases. This furthers the goal suggested by the Meister Report of developing a solicitation for existing systems that are unable to access the SREC market (Meister Report p. 6) as purchases on the spot market allow Delmarva Power to purchase SRECs from any available source. The purchase of SRECs on the spot market provides a balance to the long-term contracts to be awarded through the auction process. It will help mitigate some of the risk associated with potential volatility in SREC price from year to year, and allows Delmarva Power to take advantage of short-term fluctuations in SREC pricing.

D. Rationale for Competitive Bidding in All Tiers in the 2013 Program

For the Pilot Program, smaller tiers had administratively set pricing for the first 10 years of their long-term contracts primarily to encourage the development of a market for SRECs in Delaware and to provide certainty that Owners would be able to finance the installation costs for smaller projects. In approving the Pilot Program, Staff and the Commission were focused on whether or not administratively set pricing made sense and, in its Order, the Commission specifically directed the Taskforce to consider this issue for the 2013 Program. The Meister Report confirmed that the Pilot Program's use of administratively set pricing produced SREC price results similar to other programs in the Northeast. (Meister Report p. 39). However, it was also noted that the pricing for at least one tier may have been higher than necessary to stimulate market growth. (Meister Report p. 37).¹ Finally, the Meister Report also suggests that competitive bidding be considered for Tier 2A (or equivalent) of the Pilot Program. (Meister Report p. 6).

For 2013, the Taskforce has decided that all tiers (including both new and existing systems) will be competitively bid. This provides significant price protection to ratepayers. The Taskforce believes that the continued existence of long-term contracts will provide the necessary certainty needed for financing of new projects. Again, a balanced approach best ensures that the goals of REPSA are being met while providing minimal rate impact to ratepayers.

E. Rationale for Continuing the SEU's Involvement

Delmarva Power found the SEU and its contracting agent, SRECTrade, to be very efficient and effective in administering the SREC auction for the Pilot Program. The Taskforce has approved the continued involvement of the SEU in the 2013 Program. This allows

¹ Because the 2013 Program will be using competitive bidding in all tiers, this eliminates the need (as suggested in the Meister Report) to calculate administrative prices as a function of the results from the competitively bid tiers.

consistency in the Program and furthers the goal of reducing public confusion. In addition, this continues to allow the SEU to take advantage of their unique banking rights for SRECs. As with the Pilot Program, the issue of whether Delmarva Power will be permitted to recover the costs of using the SEU and SRECTrade to administer the 2013 Program is not being dealt with in this proceeding.

F. Rationale for Seeking Expedited Treatment

The Taskforce has recommended that the next auction for SRECs begin no later than March 31, 2013, for the compliance year starting June 1, 2013. As a result, expedited approval from the Commission is needed to ensure that the procurement of SRECs can stay on track. As with the Pilot Program, the 2013 Program was developed by the Taskforce over almost a year with input from a number of stakeholders. In addition, each of the Taskforce meetings was open to the public.

The Commission Staff and consultant have been thoroughly involved in the design of the 2013 Program. Furthermore, the Pilot Program on which the 2013 Program is based was also developed over a year-long process and was the subject of evidentiary hearings before the Commission. The Commission approved the Pilot Program and directed the parties to consider certain issues in connection with future SREC auctions. The Taskforce has considered those issues and has modified the 2013 Program as appropriate. Accordingly, Delmarva Power believes there is no prejudice to the ratepayers by giving the Application expedited treatment.

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Dated: November 20, 2012

August 3, 2012. (Attached as Exhibit A) (the "Meister Report"). Meister found that the solicitation under the Pilot Program was well subscribed, with each of the program tiers over subscribed by at least 2 to 1. Based upon feedback from subscribers as well as its own analysis, Meister identified potential modifications to the Pilot Program to reduce ratepayer impact and create a more competitive solicitation. The Taskforce considered the findings in the Meister Report in developing the 2013 Program.

9. Since the approval of the Pilot Program, the Taskforce has continued to meet at least monthly to evaluate the results of the Pilot Program and to develop a plan for procurement of SRECs in subsequent years. In developing the 2013 Program being put before the Commission in this Application, the Taskforce considered a wide range of information and feedback, including the Meister Report and the guidance set forth in the Commission Order.

III. The 2013 Program

10. The purpose of the 2013 Program is to continue the Pilot Program's goals of creating a market for SRECs in Delaware and providing a mechanism for the procurement of SRECs to ensure that retail electricity suppliers meet the requirements set forth in REPSA. The key aspects of the 2013 Program and the ways in which it differs from the Pilot Program are highlighted below. The 2013 Program, including attachments, is attached hereto as Exhibit B. A blackline showing changes made to the 2013 Program from the Pilot Program is attached as Exhibit C.

A. Term of the 2013 Program

11. Like the Pilot Program, the 2013 Program will cover only one year, the 2013 compliance year. (Ex. B at p. 4).

B. Public Competitive Bidding Administered by the SEU

12. The 2013 Program will utilize a public solicitation for SRECs for different categories of solar generators based on their capacity. (Ex. B at p. 5). As with the Pilot Program, the SEU will administer all aspects of the bid process for each utility that decides to participate in the 2013 Program. It is also anticipated that the SEU will use the agent it used for the Pilot Program, SRECTrade, for any auctions held for the 2013 Program. (Ex. B at p. 5).² The use of the SEU to fulfill this role allows one central entity to manage the program but also allows the SEU to take advantage of its banking rights under REPSA as the SEU will procure the SRECs from various solar generators and resell them to participating utilities. Delmarva found the SEU and SRECTrade to be effective in the Pilot Program and anticipates the same for the 2013 Program.

C. Procurement of SRECs from 4 Tiers of Solar Generators

13. The 2013 Program will procure SRECs from five different tiers of solar generators. (Ex. B at p. 7). Three tiers fall under the category of New Systems while two tiers fall under the category of Existing Systems. The five tiers are as follows:

² Recovery of the SEU's costs is not addressed in this Application and will be dealt with in separate proceedings.

GENERATION UNIT TIER DESIGNATIONS

<u>New Systems³</u>	
<u>Tier</u>	<u>Nameplate Rating (DC at STC)</u>
N-1	Less than or equal to 30 kW
N-2	Greater than 30 kW but less than or equal to 200 kW
N-3	Greater than 200 kW but less than or equal to 2 MW
<u>Existing Systems⁴</u>	
<u>Tier</u>	<u>Nameplate Rating (DC at STC)</u>
E-1	Less than or equal to 30 kW
E-2	Greater than 30 kW but less than or equal to 2 MW

(Ex. B. at p. 7). Unlike the Pilot Program, none of the tiers will offer SRECs at administratively set prices. Instead, all five tiers will be competitively bid. (Ex. B at p. 16).

14. Each Owner⁵ is only required to submit an application in one tier. (Ex. B at p. 16). However, the SEU may, subject to certain limitations, accept bids from a lower tier to fill the requirements of a higher tier. (Ex. B at p. 16). The limitations are as follows: (i) 30% of the total procurement for New Systems must be awarded to Owners submitting bids in Tier N-1; (ii) at least 35% of the total procurement for New Systems must be awarded to Owners submitting bids in Tier N-2; and (iii) at least 50% of the total procurement for Existing Systems must be awarded to Owners submitting bids in Tier E-1. (Ex. B pp. 16-17). Providing minimum

³ Eligible New Systems are systems with final interconnection approval after the first date of the preceding auction process (i.e., April 2, 2012 for compliance year 2012).

⁴ Eligible Existing Systems are systems with final interconnection approval before the first date of the preceding auction process.

⁵ Capitalized terms used herein but not defined shall have the meaning given to them in the 2013 Program.

requirements in the smaller tiers ensures that a sufficient number of smaller systems will be able to participate while also ensuring the lowest competitive SREC price in the higher tiers.

15. Based on Delmarva Power's forecasted load, it intends to procure 8,000 SRECs from each tier in the following quantities:

New Systems - 4,000 SRECs

- Tier N-1 – 1,200 SRECs
- Tier N-2 – 1,400 SRECs
- Tier N-3 – 1,400 SRECs

Existing Systems - 3,000 SRECs

- Tier E-1 – 1,500 SRECs
- Tier E-2 – 1,500 SRECs

Spot Market Purchases - 1,000 SRECs

(Ex. B. at p. 18).

D. Standard Transfer Agreements and Other Requirements

16. Each Owner who is successful in having their bid selected will enter into a standard Transfer Agreement with the SEU. (Ex. B at Appendix B). The Transfer Agreement is largely the same as the one used for the Pilot Program and has been modified only to take into account changes in the 2013 Program.

17. Each Transfer Agreement will have a term of 20 years. (Ex. 13 at p. 10). For the first seven years the SREC price will be the accepted bid price. (Ex. B at p. 12). For the remaining 13 years, the SREC price will be fixed at \$50 per SREC. (Ex. B at p. 12).

18. As with the Pilot Program, the Transfer Agreement will impose certain contract minimums and maximums, depending on tier. In each bid, regardless of tier, the Owner will

provide an Estimated SREC Quantity. (See Ex. B at Appendix A). The quantity of SRECs delivered to the SEU in any year is limited to 110% of the Estimated SREC Quantity, which amount shall be the Contract Maximum. (Ex. B at p. 11). In addition, for any Tier N-3 or Tier E-2 project with a nameplate rating of 500kw or greater, the Owner shall be subject to a Minimum Annual Quantity. (Ex. B at p. 11). Each Owner subject to a Minimum Annual Quantity must deliver to the SEU SRECs equal to no less than 80% of its Estimated SREC Quantity. (Ex. B at p. 11).

E. Public Interest

19. The primary difference between the Pilot Program and the 2013 Program is the fact that all tiers are competitively bid and there is no administrative pricing in any tier. Accordingly, the Taskforce believes that the 2013 Program improves upon the results achieved through the Pilot Program in that it ensures the lowest SREC price (and, therefore, customer impact) while continuing to create a market for SRECs at all levels of generation. Delmarva agrees that approval of the Pilot Program was in the public interest and submits that the 2013 Program, with its minor improvements, is also in the public interest.

IV. Request for Expedition and Approval

20. In order to begin the public bidding contemplated by the 2013 Program on time, Delmarva Power respectfully requests that this Application be handled on an expedited basis such that it can be presented to the Commission on December 18, 2012 or as soon thereafter as possible.

21. Accordingly, because Delmarva Power and the Taskforce believe the 2013 Program satisfies the goals set forth by REPSA, improves upon the Pilot Program, addresses the recommendations contained in the Meister Report and, as demonstrated above, is in the public

interest, Delmarva Power respectfully requests that the Commission approve the 2013 Program attached as Exhibit B.

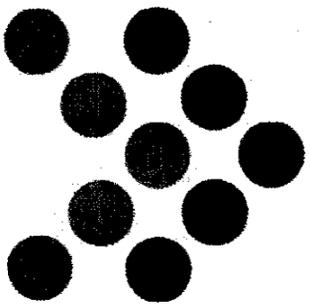
WHEREFORE, for the foregoing reasons, Delmarva Power respectfully requests that the 2013 Program be approved.

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Dated: November 20, 2012

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Exhibit A



Evaluation of the Delaware SREC Pilot

Prepared for the Delaware Public Service Commission

August 3, 2012



TABLE OF CONTENTS

Executive Summary and Report Structure	5
Chapter 1. Analysis and Evaluation of Procurement Tiers and Market Response	7
1.1. Market Response to Tiers.....	7
1.1.1. Tier 1 Market Response (0-50kW – Lottery Procurement)	8
1.1.2. Tier 2A Market Response (>50-250kW – Lottery Procurement).....	11
1.1.3. Tier 2B Market Response (>250-500kW – Competitive Procurement)	14
1.1.4. Tier 3 Market Response (>500-2,000kW – Competitive Procurement)	17
1.2. Should Delaware Have a Solar Policy with Differentiated Incentives?	20
1.3. Comparative Analysis of Delaware Pilot Tiers	22
1.3.1. U.S. State Policies	22
1.3.2. International Policies	24
1.4. Comments on the SREC Pilot Tiers.....	24
Chapter 2. Analysis and Evaluation of Pilot Prices	27
2.1. Review of the PV Planner Tool.....	27
2.2. Review of Modeling Assumptions & Evaluation of Financial Model Used to Set Prices.....	27
2.2.1. System Costs	28
2.2.2. Array Size	31
2.2.3. Capacity Factor, Slope and Azimuth.....	32
2.2.4. Annual Operations, Maintenance, and Insurance	33
2.2.5. Inverter Replacement Year and Inverter Replacement Cost	34
2.2.6. Other Incentives: Treasury Grant Monetization Costs and State Rebate	34
2.2.7. Delaware Labor and Manufactured Equipment Adders.....	35
2.2.8. Federal and State Depreciation.....	35
2.2.9. Ownership Structure	35
2.2.10. Conclusions on Model Inputs.....	36
2.3. How Administratively Set Prices Compare to Tier 2B and Tier 3 Auction Prices	36
2.4. How Administratively Set Prices Compare to Long-term Contract Prices In Other States	37
2.4.1. New Jersey (Atlantic City Electric, Jersey Central Power & Light, and Rockland Electric Company)	37
2.4.2. New Jersey (PSE&G)	38
2.4.3. Rhode Island.....	38
2.4.4. Pennsylvania Utility Long-term Contract Solicitations	39
2.4.5. Conclusions	39
Chapter 3. Evaluation and Analysis of The Sustainable energy utility (seU).....	40

3.1. Applicant Feedback on the SEU's performance.....	40
3.1.1. Overview of survey Respondents.....	40
3.1.2. Survey Results.....	41
3.2. Comparison of Administrative Structure to Other programs.....	50
3.2.1. Overview of Delmarva SREC Solicitation Design.....	50
3.2.2. Comparison to other State-Level Programs.....	53
Chapter 4. Bloom Fuel Cell Impacts on SREC Purchase Obligations.....	58
4.1. Bloom Fuel Cell Projects Regulatory Background.....	58
4.2. Expected Bloom Fuel Cell Projects SREC Obligation Reductions.....	59
Chapter 5. Program Design Analysis.....	62
5.1. Program Cost Effectiveness Questions.....	62
5.1.1. Compare the cost effectiveness and risks of the competitive bidding process to the administratively set prices in Tiers 1 and 2A?.....	62
5.1.2. How can the program be designed to minimize ratepayer costs given the other objectives set forth in REPSA?.....	66
5.1.3. Compare the cost effectiveness and risks of the long-term contracts relative to purchases of SRECs on the spot market.....	69
5.2. Consumer Protection.....	71
5.3. How can the program be designed with regard to the objective of maximizing in-state solar renewable energy generation and local manufacturing?.....	72
Works Cited.....	74
Appendix A. Survey Questions.....	78

LIST OF FIGURES

FIGURE 1. TIER 1 SOLICITATION RESULTS	10
FIGURE 2. TIER 2A SOLICITATION RESULTS	13
FIGURE 3. TIER 2B SOLICITATION RESULTS	16
FIGURE 4. TIER 3 SOLICITATION RESULTS	19
FIGURE 5. NATIONAL PV INSTALLED COST TRENDS BY SYSTEM SIZE 2005-2010 (BARBOSE, DARGHOUTH, WISER, & SEEL, 2011)	21
FIGURE 6. INSTALLED COSTS FOR PV SYSTEMS LESS THAN 50 kW INSTALLED IN 2012 IN MASSACHUSETTS AND CALIFORNIA (MASS. DOER, 2012; CALIFORNIA SOLAR INITIATIVE, 2012)	30
FIGURE 7. WAS YOUR PROJECT ONLINE AT THE TIME YOU SUBMITTED YOUR APPLICATION? WAS YOUR PROJECT AWARDED A CONTRACT UNDER THE SREC PILOT?	41
FIGURE 8. DO YOU THINK SRECTRADE/SUSTAINABLE ENERGY UTILITY (SEU) DID AN ADEQUATE JOB OF NOTIFYING THE SOLAR COMMUNITY ABOUT THE SOLICITATION?	43
FIGURE 9. WOULD YOU PREFER A COMPETITIVE PROCESS OR ADMINISTRATIVELY SET PRICES?	44
FIGURE 10. DID YOU PERCEIVE ANY ADDITIONAL RISK ASSOCIATED WITH CONTRACTING THROUGH THE SUSTAINABLE ENERGY UTILITY INSTEAD OF DIRECTLY THROUGH DELMARVA?	45
FIGURE 11. PLEASE RATE YOUR EXPERIENCE WITH THE FOLLOWING ATTRIBUTES OF THE QUESTION AND ANSWER PROCESS.	45
FIGURE 12. PLEASE RATE YOUR EXPERIENCE ON THE FOLLOWING ATTRIBUTES OF THE SOLICITATION ADMINISTRATION	46
FIGURE 13. OVERALL, DO YOU THINK THE PROGRAM WAS FAIRLY AND EFFECTIVELY ADMINISTERED?	47
FIGURE 14. RESPONDENT'S EVALUATION OF THE PROGRAM BASED ON WHETHER THEY WERE ACCEPTED INTO THE PROGRAM	47
FIGURE 15. OVERALL, HOW SATISFIED WERE YOU WITH YOUR OWNER REPRESENTATIVE?	49
FIGURE 16: ADMINISTRATIVE STRUCTURE OF THE SREC PILOT	50
FIGURE 17: NJ SOLICITATION ADMINISTRATIVE STRUCTURE	53
FIGURE 18: RHODE ISLAND STANDARD OFFER ADMINISTRATIVE STRUCTURE	54
FIGURE 19: CONNECTICUT LONG TERM ZREC PROCUREMENT ADMINISTRATIVE STRUCTURE.....	54
FIGURE 20. ESTIMATED ANNUAL DELMARVA SREC OBLIGATION AND MAXIMUM BLOOM SREC OFFSET	61
FIGURE 21. TIER 2B AND TIER 3 BID PRICES VS. SYSTEM SIZES (NOTE: AXES SCALE REMOVED TO ANONYMIZE DATA).....	67

EXECUTIVE SUMMARY AND REPORT STRUCTURE

In April of 2012, the Delaware Sustainable Energy Utility (SEU) in coordination with its contractor SRECTrade implemented the first round of the state of Delaware's solar renewable energy credit (SREC) long-term contracting pilot (the SREC Pilot). This new initiative was jointly designed by the members of the state's Renewable Energy Task Force (RETF) during late 2011 and 2012 under its legislative mandate to recommend policies and programs that aid in the development of renewable energy markets in Delaware. The pilot program created a multi-tiered solicitation for long-term solar renewable energy credits that broadly supported multiple system sizes and ownership classes by awarding twenty-year SREC purchase contracts to PV system owners. Under the pilot program, the Delaware SEU serves as the long-term contracting agent, with Delmarva Power purchasing and retiring SRECs to meet its regulatory obligations under the state's renewable portfolio standard. This document was developed in coordination with the Delaware Public Service Commission (DPSC) to review the results of this initial solicitation and also responds to a number of key questions posed by both the Commission and other state solar market stakeholders.

The pilot program awarded twenty-year SREC contracts to 166 Delaware-sited PV systems totaling 7.68 MW of capacity with an expected first-year SREC production of 11,472. The solicitation was well subscribed, with more than 23 MW of PV capacity entering the solicitation from 548 individual systems. Pilot participants submitted bids into one of four project size categories which ranged from:

- Tier 1: Up to 50kW
- Tier 2A: Greater than 50kW to 250kW
- Tier 2B: Greater than 250kW to 500kW
- Tier 3: Greater than 500kW to 2,000kW

Contracts for the two smallest tiers were awarded through a lottery process, with projects using both Delaware labor and manufactured goods receiving lottery preference. Projects bidding into the two largest solicitation tiers were awarded contracts based on a competitive auction with winning bidders receiving as-bid long-term contract rates.

SREC contract prices for tiers 1 and 2A were set through an administrative rate setting process at \$260 and \$240 per SREC respectively for 10 years and \$50 per SREC for contract years 11-20. The competitive Tier 2B auction resulted in a weighted average SREC contract price of \$131 for the initial 10 contract years, while the weighted average contract price for Tier 3 was \$154. As with the other tiers, contracts for tiers 2B and 3 included a fixed \$50 per SREC price from contract years 11-20. Both projects that were already operational and those that were under development/proposed to be developed during the next year were eligible to participate under the pilot. The response to the solicitation was robust, with each of the program tiers oversubscribed by at least 2 to 1. Additionally, the legislatively mandated program adders that are designed to promote use of both Delaware source PV equipment and Delaware installation labor were very effective with more than 40 percent of all projects choosing to apply for both these adders. A complete accounting of the market response to the solicitation can be found in Chapter 1 of this report. A full accounting of the solicitation price results is reviewed in Chapter 2 along with a comprehensive analysis of the administratively set contract rates.

As part of this report, an on-line customer survey was performed to gauge system owner opinions about the solicitation process, the performance of both the SEU and SRECTrade, and other factors. 123 system owners or owners representatives completed this survey providing detailed feedback about their program experience. Many respondents expressed satisfaction with the performance of the pilot coordinators but expressed frustration with the pilot program eligibility criteria. Some respondents additionally indicated they were not made fully aware of the financial risks associated with their solar investments when they first made the decision to purchase a PV system. Chapter 3 of this report reviews the results of this system-owner survey and also

reviews SREC solicitation program structures and costs from other East Coast solar markets. A comparative analysis of the administrative costs associated with the Pilot is also discussed.

Under state law, the 30 MW Bloom fuel cell project will offset the number of SRECs Delmarva power will need to purchase from Delaware PV system owners. While the precise market dynamics of how this will impact the supply and demand for SRECs in the coming years is uncertain, the Bloom project is likely to offset a maximum of 30 percent of Delmarva's annual SREC obligation in 2018. The analysis in Chapter 4 estimates that Bloom project offsets will have a reducing impact on Delmarva's total SREC obligation on a percentage basis after 2018 as the state's solar mandate continues to grow and while the total output of the Bloom projects does not.

A number of potential alterations to the Pilot program structure could be considered by Delaware policy makers during the next program round to reduce ratepayer impacts. Potential options for creating a more competitive solicitation include:

- Reducing the total number of solicitation tiers,
- Exploring the use of an auction-based solicitations for the current Tier 2A,
- Setting administratively-set prices as a function of the competitive solicitation tiers, and
- Developing a solicitation specifically for existing systems that are unable to access the SREC market.

These potential design options are discussed in depth in Chapter 5 of this report along with a review of potential consumer protection initiatives Delaware policymakers could implement to better educate the public about the risks and benefits of the SREC market. This chapter also examines the risks and benefits to ratepayers of future policies that might encourage Delmarva or other obligated entities to enter into long-term SREC contracts.

CHAPTER 1. ANALYSIS AND EVALUATION OF PROCUREMENT TIERS AND MARKET RESPONSE

This section will evaluate several aspects of the Delaware SREC Pilot procurement related to the program solicitation tiers. Key questions that will be considered include:

- The market response to each of the procurement tiers,
- Whether the Delaware SREC program should continue to use a multi-tiered incentive structure,
- How the tiers from the pilot compare to other regional SREC programs as well as incentive programs from leading global solar markets ,
- Review of projects awarded contracts under the program, and
- The effectiveness of the Delaware equipment bonus and Delaware workforce bonus.

1.1. MARKET RESPONSE TO TIERS

The Delmarva SREC Pilot awarded contracts for a range of system sizes up to 2,000kW.¹ Under the pilot program, projects eligible for Tiers 1 (0-50kW) and 2A (greater than 50kW to 250kW) were awarded contracts with administratively set prices. Because these tiers were oversubscribed, selection for Tiers 1 and 2A was based on a lottery system with projects using Delaware manufactured components and labor receiving priority selection.² Tiers 2B (greater than 250kW to 500kW) and 3 (greater than 500kW to 2,000kW) were awarded contracts based on an as-bid competitive price auction. The four procurement tiers and the volume of SRECs procured in each system class are listed in Table 1 below. A fifth tier, consisting of projects larger than 2,000 kW has also been approved; however, SRECs for this tier had previously been procured by Delmarva under a long-term contract with the 11.2 MW Dover Sun Park.

Table 1. Delaware SREC Pilot Tiers and SREC Volumes

Tier	Minimum Project Size (kW)	Maximum Project Size (kW)	Pilot SREC Volume	Procurement Method
1	0	50	2,972	Lottery
2A	>50	250	2,000	Lottery
2B	>250	500	2,000	Competitive Auction
3	>500	2,000	4,500	Competitive Auction
4	>2000	N/A	0	Bi-lateral Contract

Each of the pilot procurement tiers was oversubscribed.³ Table 2 below shows a breakdown of the number of effective SRECs bid into each tier by system type.⁴ As the table illustrates, Tiers 2A and 2B were substantially

¹ Nameplate rating (DC at Standard Test Conditions)

² Criteria for these qualifications is described in 26 Del. C. §356: (d) A retail electricity supplier shall receive an additional 10% credit toward meeting the renewable energy portfolio standards established pursuant to this subchapter for solar or wind energy installations sited in Delaware provided that a minimum of 50% of the cost of renewable energy equipment, inclusive of mounting components, are manufactured in Delaware. (e) A retail electricity supplier shall receive an additional 10% credit toward meeting the renewable energy portfolio standards established pursuant to this subchapter for solar or wind energy installations sited in Delaware provided that the facility is constructed and/or installed with a minimum of 75% in-state workforce.

³ Based on a survey of Delaware solar installers, the Renewable Energy Task Force (RETF) and Delmarva anticipated the procurement tiers would be oversubscribed (DPL, 2011).

⁴ "Effective SRECs" is used throughout this report to describe the number of SRECs generated by a system including SRECs resulting from the Delaware equipment and workforce bonus adders.

oversubscribed with contract demand exceeding available supply by a ratio of more than three-to-one. Tiers 1 and 3 also received more bids than were available under the solicitation.

Table 2. SRECs Bid into the Pilot Program

Tier	SREC Bid	SRECs Required	Percent Oversubscribed
1	6,601	2,972	222%
2A	9,881	2,000	494%
2B	7,275	2,000	363%
3	10,220	4,500	227%

The following sections will provide a detailed accounting of bidding for each of the procurement tiers.

1.1.1. TIER 1 MARKET RESPONSE (0-50KW – LOTTERY PROCUREMENT)

Projects less than or equal to 50kW were eligible for the Tier 1 lottery-based procurement. Under program rules, projects that included both Delaware manufactured equipment and used Delaware labor were given priority in the lottery.⁵ Table 3 below reviews the results of the Tier 1 procurement. 483 systems submitted applications for this tier. Of these, 148 systems totaling 2,006.5kW of capacity were awarded contracts. Of the awarded contracts, 69 systems were previously operational while 79 systems are under development. All systems awarded contracts under this tier had both Delaware manufactured components and Delaware-sourced labor.

Table 3. Tier 1 Solicitation Statistics

	Number of Systems	Effective SRECs	Capacity (kW)
Accepted	148	2,972.4	2,006.5
Under Development/Proposed	79	1,872	1,261.8
Operational	69	1,100.4	744.7
Not Accepted	335	3,628.1	2,715.6
Under Development/Proposed	90	1,133.4	830.5
Operational	245	2,494.7	1,885.2
Tier Total	483	6,600.5	4,722.1

More than 2,000kW of under-development projects submitted bids under the solicitation. This strong response from prospective project owners suggests that the administratively set price for Tier 1 was sufficient to support the development of new projects. Additionally, nearly 1,600kW of non-operational projects in Tier 1 stated they would qualify for both the Delaware workforce and equipment bonuses, indicating that the SREC price adders are sufficient to drive system owners to use Delaware sourced labor and panels.

Pilot participant surveys suggest that many of Tier 1 project owners who installed systems in Delaware between December 1, 2010 and the start of the SREC Pilot assumed they would be able to monetize SREC revenues at

⁵ Under the lottery system, all systems using both Delaware components and labor were randomly assigned a lottery number. Projects with lower lottery numbers were sequentially awarded contracts until the total volume of SRECs under contract reached to Tier 1 2,972 limit. If projects applying for both the labor and equipment bonuses were insufficient to cover the full SREC volume of the Tier 1 solicitation, a similar lottery would have been conducted for applying systems that had used either Delaware labor or equipment (SRETrade, 2012a).

prices not currently supported by either the Delaware or Pennsylvania SREC spot markets. At the time of the solicitation, 2,652.04kW of Tier 1-qualifying solar PV was registered in the PJM-GATS system.⁶ 2,629.9kW of operational capacity applied under Tier 1, suggesting that nearly all the eligible in-state capacity submitted entries into the lottery seeking long-term contracts. Given that 744.7kW of existing in-state capacity was awarded contracts under Tier 1, this indicates that total "stranded" Tier 1 capacity in the state is likely around 1,900 kW.⁷

Figure 1 provides a breakdown of system sizes within Tier 1. The figure shows the distribution of capacity and the number of systems applying for four categories:

- Systems that were under development and awarded contracts,
- Systems that were operational and awarded contracts,
- Systems that were under development and not awarded contracts, and
- Systems that were operational and not awarded contracts.

As these figures indicate, capacity applying for the Tier 1 lottery tended to cluster in the 5-10 kW system range and the 45-50 kW range. More than thirty-one percent of the total capacity awarded contracts under the Tier 1 lottery was awarded to 13 systems in the 45-50 kW size range. Project economics for systems in this size range can differ substantially from typical residential PV systems and the relatively high number of systems in the upper range of Tier 1 suggests that developers of small commercial systems may have downsized projects in order to take advantage of higher Tier 1 contract prices. Also, several solar financing firms are listed as project owners for systems in the upper range of Tier 1 indicating that the third-party ownership model is available to projects of this size range in Delaware. Additionally, one developer submitted entries for five 48kW systems that appear to all be part of an aggregated development in the same office park. Four of these systems were awarded contracts. These four projects may benefit from economies of scale that are not available to residential system owners.

⁶ Systems located in Delaware with a Delaware RPS program registration number and an on-line date of December 1, 2010 or later are included in this total (PJM, 2012).

⁷ Note: This figure only includes systems that qualified under the SREC Pilot on-line date restrictions.

Projects that use both Delaware equipment and labor received an additional 20 percent SREC contract value (10 percent for the equipment bonus and 10 percent for the labor bonus). 183 of the 483 Tier 1 applications applied for both the equipment and labor bonuses totaling more than 3,632 SRECs. Given that lottery preference was given to projects applying for both these bonuses and that only 2,872 SRECs were procured under this tier, only projects which qualified for both adders were awarded projects in Tier 1.⁸ Table 4 shows the market response to the labor and equipment adders in Tier 1.

Table 4. Tier 1 Response to Delaware Labor and Equipment Adders

	Capacity (kW)	Number of Systems
Non-Delaware Labor and non-Delaware Equipment	239.2	24
Delaware Labor and non-Delaware Equipment	2,025.8	276
Delaware Labor and Delaware Equipment	2,457.1	183

1.1.2. TIER 2A MARKET RESPONSE (>50-250KW – LOTTERY PROCUREMENT)

Projects greater than 50kW and 250kW were available for the Tier 2A lottery. Like the Tier 1 lottery, projects that included both Delaware labor and equipment were given preference in the lottery queue. Table 5 below details the results of the Tier 2A solicitation. 42 systems bid into Tier 2A. Of these, nine systems totaling 1,331.8kW of capacity were awarded contracts.⁹ Of the awarded contracts one system was previously operational while eight systems are under development. All systems awarded contracts under this tier had both Delaware manufactured components and Delaware sourced labor.

Table 5. Tier 2A Solicitation Statistics

	Number of Systems	Effective SRECs	Capacity (kW)
Accepted	8.5	2,000	1,331.8
Under Development/Proposed	7.5 ¹⁰	1,911.2	1,274.7
Operational	1	88.8	57.1
Not Accepted	33.5	7,881.1	5,478.7
Under Development/Proposed	21.5	5,895.2	3,969.9
Operational	12	1,985.9	1,508.8
Tier Total	42	9,881.1	6,810.5

As previously mentioned, Tier 2A was substantially oversubscribed, with more than 9,800 SRECs bid into the solicitation seeking contracts for only 2,000 required annual SRECs. Given the relatively small number of SRECs

⁸ Some solicitation participants that installed systems prior to the development of the SREC pilot program rules have expressed concern that lottery preference for projects with Delaware-sourced labor and equipment created a de facto Delaware sourcing requirement for the SREC market.

⁹ Note: One system was awarded a partial fill as awarding the full volume of SRECs bid by that system would have exceeded the available Tier 2A volume.

¹⁰ One project was originally a 161 kW single system. The SREC bid for this system was only partially filled due to oversubscription of the tier.

procured under this tier, this sizeable oversubscription may not be that remarkable. Two factors that may account for the sizeable Tier 2A oversubscription:

- Pent up state-wide demand for systems in this size class, and
- An administratively set price that may have been higher than necessary.

Regarding the issue of pent-up demand, the medium sized commercial PV system market in Delaware has been limited to date, with fewer than 35 systems representing less than 3,500 kW of capacity being built in the state between 2006 and early 2012 (PJM, 2012). More new PV potential capacity bid into this solicitation tier than currently exists in this size class across the entire state. This limited size of the existing Tier 2 sub-market is likely, in-part, due to the constraints of the Green Energy Fund rebate programs which only fund commercial system up to 50kW. Given that the SREC pilot is the first significant incentive program targeted at this system size class, the substantial oversubscription of the 2A tier may not be unusual.

During final program rulemaking, the PSC requested that systems in the administratively set tiers be allowed to bid into the competitively priced tiers in order to provide smaller system owners with the opportunity to compete for contracts. Several system owners with under development/proposed installations that would have qualified for inclusion in the 2A lottery chose to submit competitive bids for the 2B auction. Each of these submitted auction bids were significantly below the \$240 administrative price for Tier 2A. This suggests that the oversubscription of the 2A tier could in part be attributable to an administratively set price that over-incentivized some project developers.¹¹ A further discussion of the administratively set prices can be found in Chapter 2.

The PJM GATs Delaware database lists 17 PV systems totaling 2,126 kW in the class 2A size range that meet the eligibility criteria of the SREC solicitation. Four operational systems totaling 475kW in the class 2A size range were awarded contracts under either the 2A lottery or the 2B auction. This indicates that there is 1,651kW of "stranded" capacity in the Tier 2A size range in Delaware after the first SREC pilot procurement.

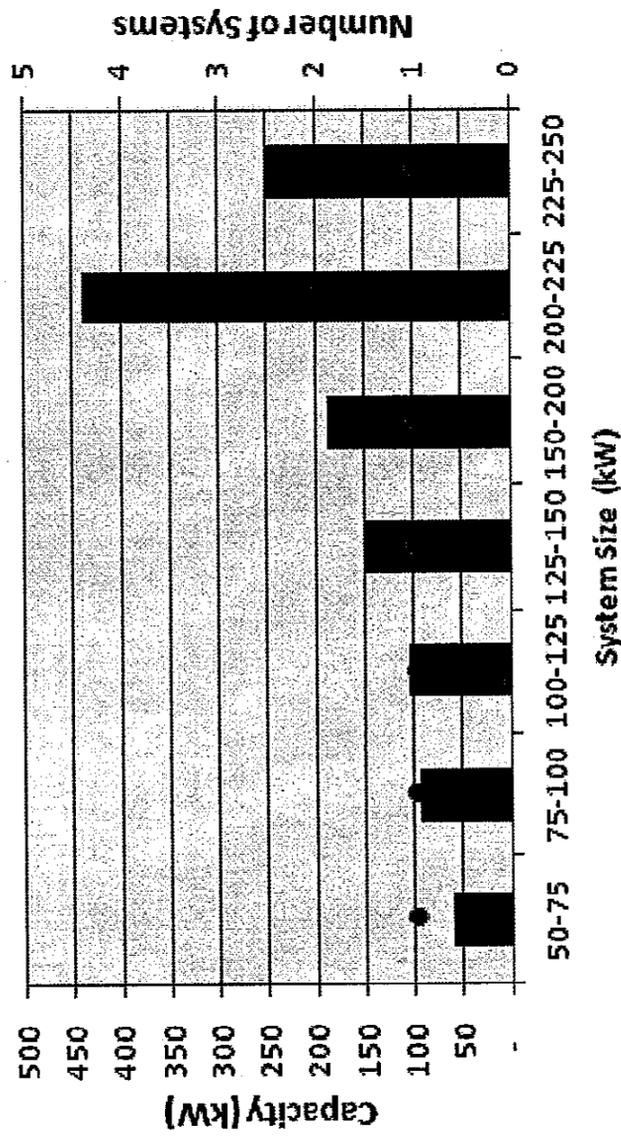
Figure 2 provides a breakdown of system sizes within Tier 2A. The figure shows the distribution of capacity and the number of systems applying for four categories:

- Systems that were under development and awarded contracts,
- Systems that were operational and awarded contracts,
- Systems that were under development and not awarded contracts, and
- Systems that were operational and not awarded contracts.

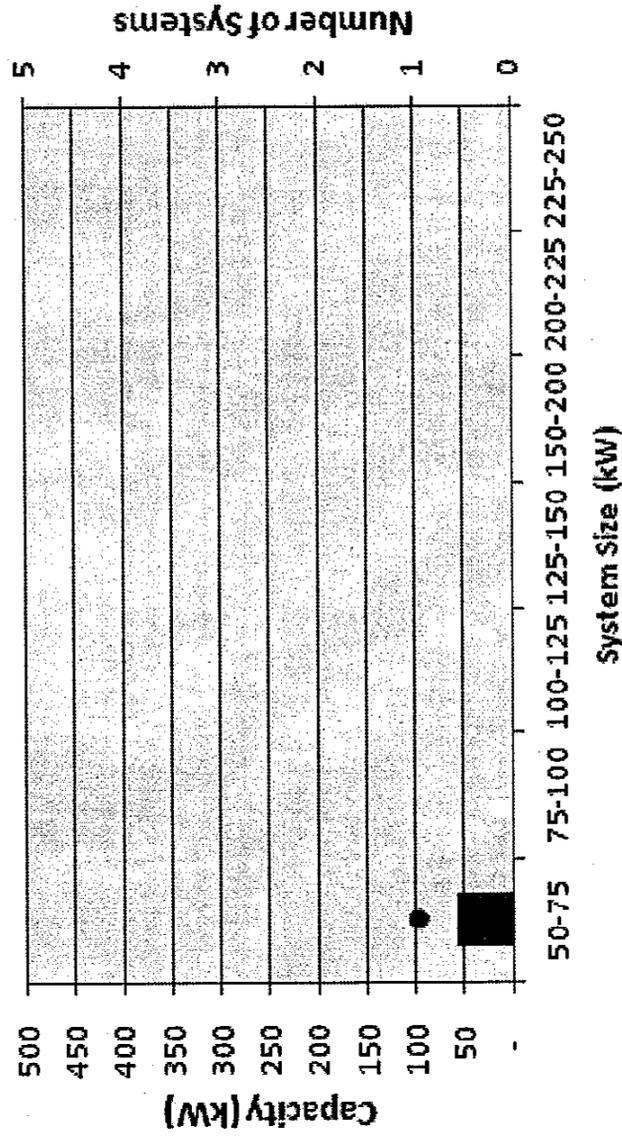
As these figures indicate, capacity applying for the Tier 2A lottery was more evenly distributed across the size range than in Tier 1. A significant number of under-development projects in the 225-250kW range applied to the lottery but were not awarded contracts. This high concentration of under-development projects in this system size bin may suggest that developers planned projects that were near the maximum size limit for lottery participation. Additionally, few under-development projects were submitted in the smallest size range, suggesting that some project developers may have undersized their systems in order to qualify for the higher Tier 1 incentive.

¹¹ It should be noted that the small number of 2A-scale project bidding into the 2B auction make it difficult to draw a definitive conclusion whether 2A pricing was set too high. The individual circumstances of each of the systems that chose to bid-up to the 2B tier are not available and factors specific to each of these installations may have allowed them to bid prices substantially below the administratively set 2A price.

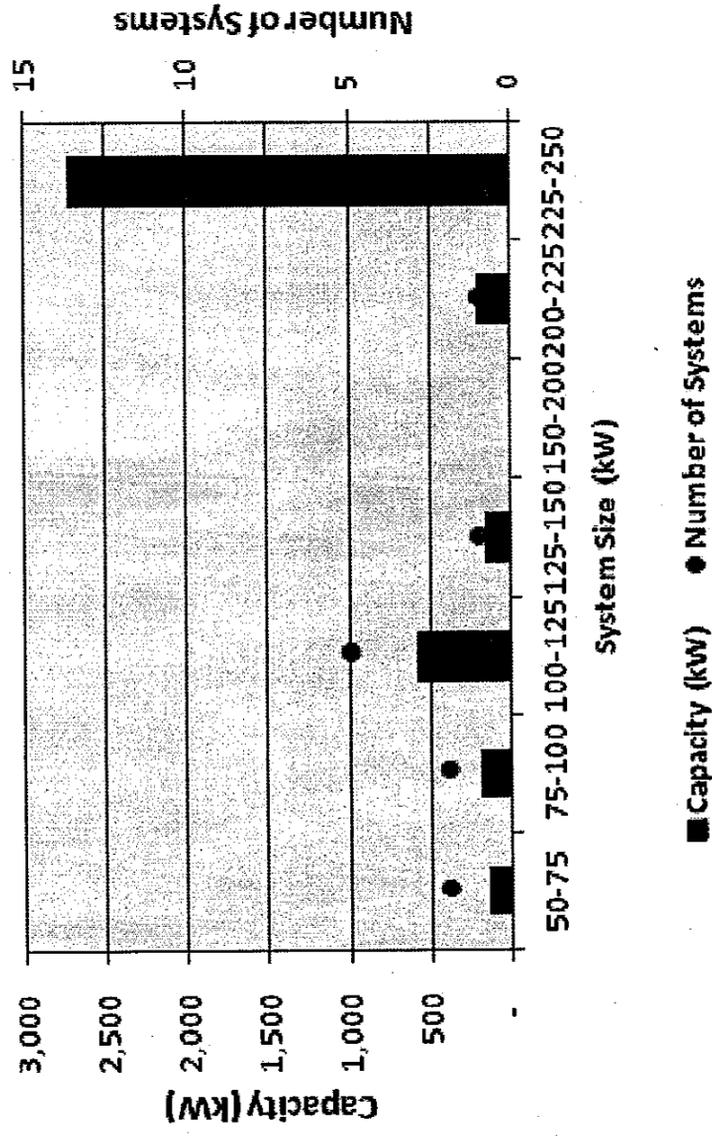
Accepted Under Development



Accepted Operational



Not Accepted Under Development



Not Accepted Operational

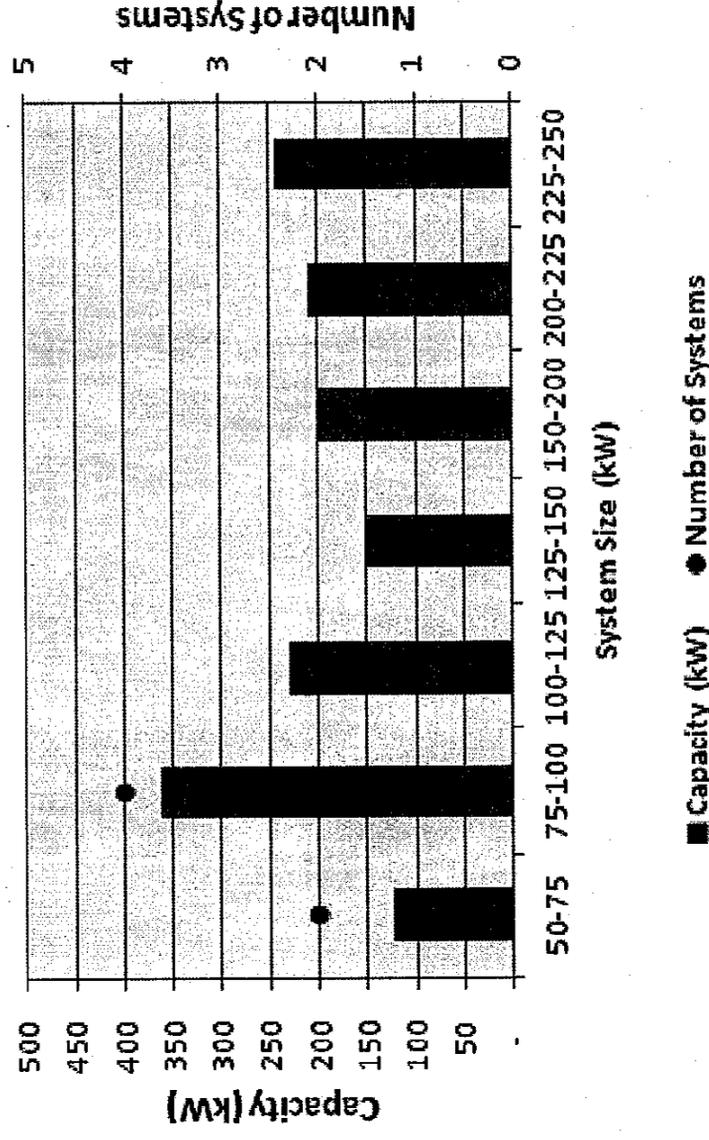


Figure 2. Tier 2A Solicitation Results

As with the Tier 1 procurement, projects in Tier 2A that use both Delaware equipment and labor received an additional 20 percent SREC contract value. 36 of the 43 Tier 2A applications had both the equipment and labor bonuses totaling more than 8,662 of effective SREC volume. Given that lottery preference was given to projects having both these bonuses, and that only 2,000 SRECs were procured under this tier, only projects which qualified for both adders were awarded projects in Tier 2A. Table 4 shows the market response to the labor and equipment adders in Tier 2A.

Table 6. Tier 2A Market Response to Labor and Equipment Adders

	Capacity (kW)	Number of Systems
Non-Delaware Labor and non-Delaware Equipment	750.5	5
Delaware Labor and non-Delaware Equipment	242.1	2
Delaware Labor and Delaware Equipment	5,818.0	35

1.1.3. TIER 2B MARKET RESPONSE (>250-500kW – COMPETITIVE PROCUREMENT)

The Tier 2B solicitation was competitively bid using a pay-as-bid price auction. This tier had a maximum system size of 500kW and a lower bound of greater than 250kW. Smaller systems were permitted to submit competitive bids and forgo the Tier 1 and 2A lotteries. Fourteen systems with a total capacity of 5,182kW bid into the Tier 2B auction. Of these, five systems were awarded contracts totaling 1,518kW (one of these systems was only awarded part of its bid volume). As previously mentioned, Tier 2B was significantly oversubscribed, with more than 3,500kW of capacity not receiving contracts. Table 7 provides a breakdown of systems submitting bids for the Tier 2B auction. As discussed above, two systems that could have qualified for the Tier 2A lottery submitted competitive bids and one was awarded a contract.

Table 7. Tier 2B Solicitation Statistics

	Number of Systems	Effective SRECs	Capacity (kW)
Accepted	4.5	1,999.8	1,518.2
Under Development/Proposed	1	790.8	499.2
Operational	3.5 ¹²	1,209.0	1,019.0
Not Accepted	9.5	5,275.0	3,663.6
Under Development/Proposed	9	5,099.0	3,526.8
Operational	.5	176.0	136.7
Tier Total	14	7,274.8	5,181.7

The pricing results for Tier 2B are as follows:

- The weighted average bid price for all systems in Tier 2B was \$154.02 per effective SREC,¹³
- The weighted average winning bid was \$131.13 per effective SREC,
- The highest winning bid was \$139.48 per SREC,
- The lowest accepted bid was \$120.00 per SREC,

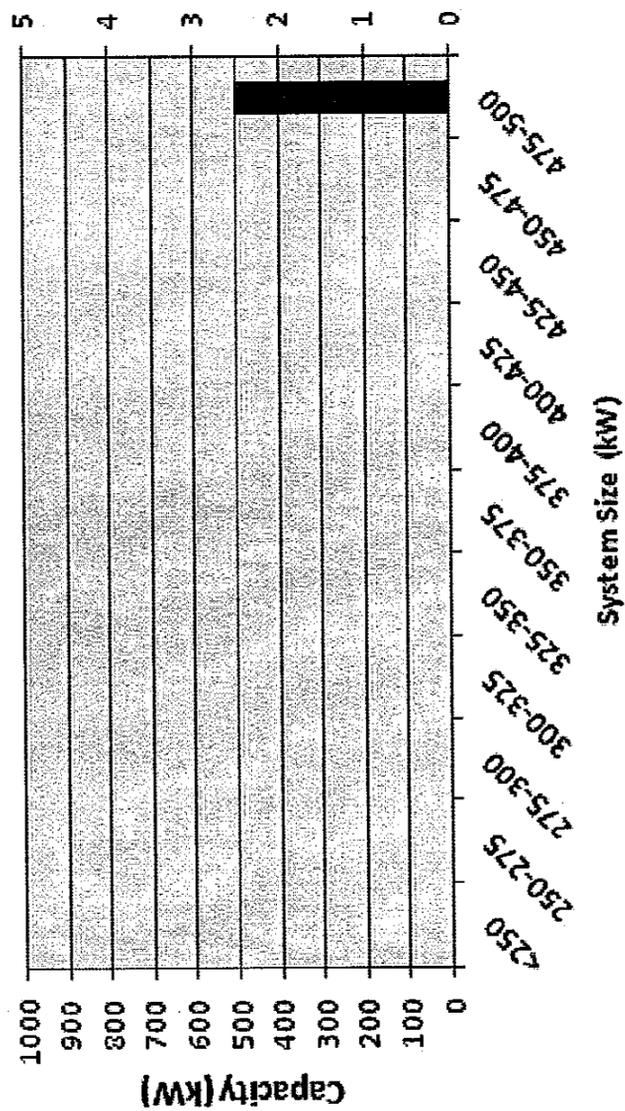
¹² One project was originally a 386 kW system that was split due to oversubscription of the tier.

¹³ Effective SREC values include any SRECs added above the bid SREC volume as a result of either Delaware labor or equipment bonuses.

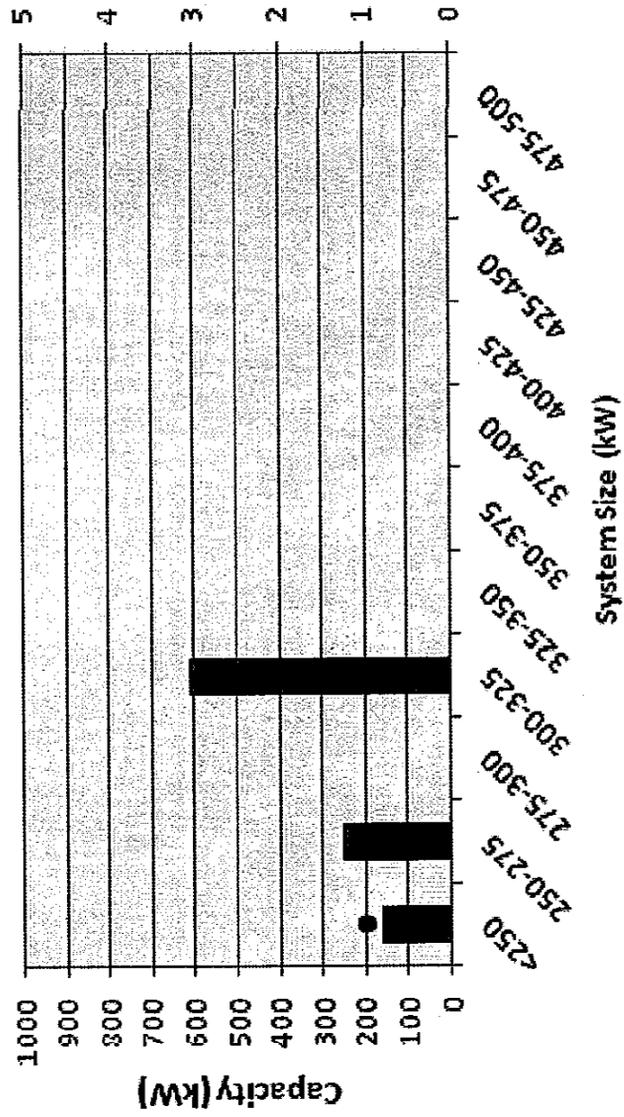
- The weighted average bid price for operational systems was \$134.54, and
- The weighted average bid price for under development systems was \$158.60.

Several project developers submitted multiple bids in the Tier 2B auction. One system owner won three of the five contracts and while only nine project developers submitted bids in the tier. Figure 3 shows the breakdown of systems sizes within the 2B tier. As in other tiers, bids tended to cluster towards the upper limit of the tier potentially suggesting that developers sized systems to meet the constraints of Tier 2B.

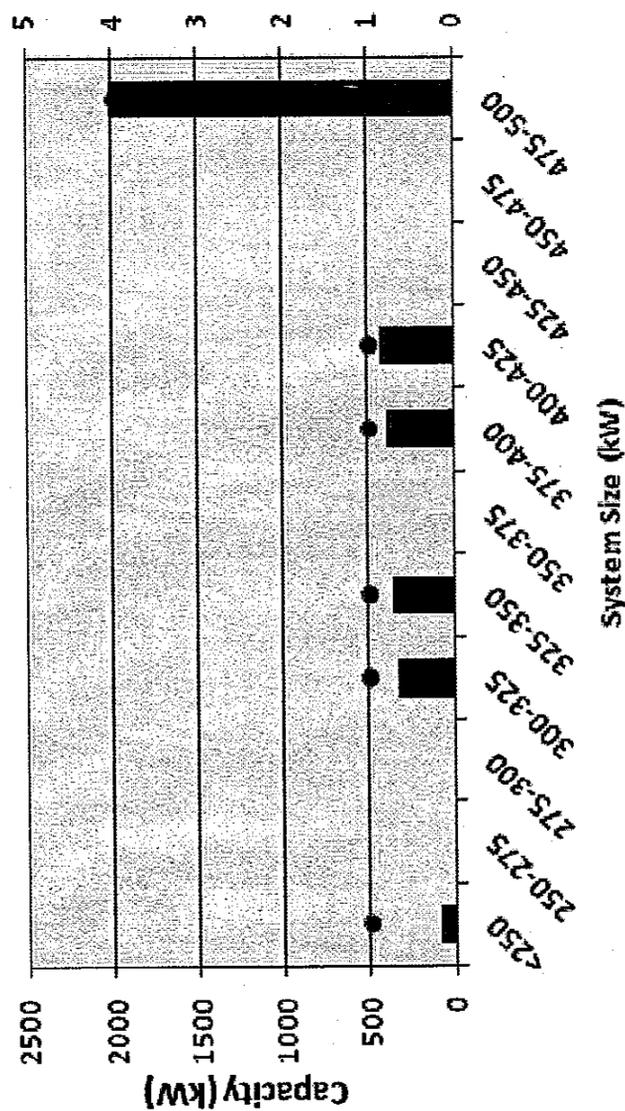
Accepted Under Development



Accepted Operational



Not Accepted Under Development



Not Accepted Operational

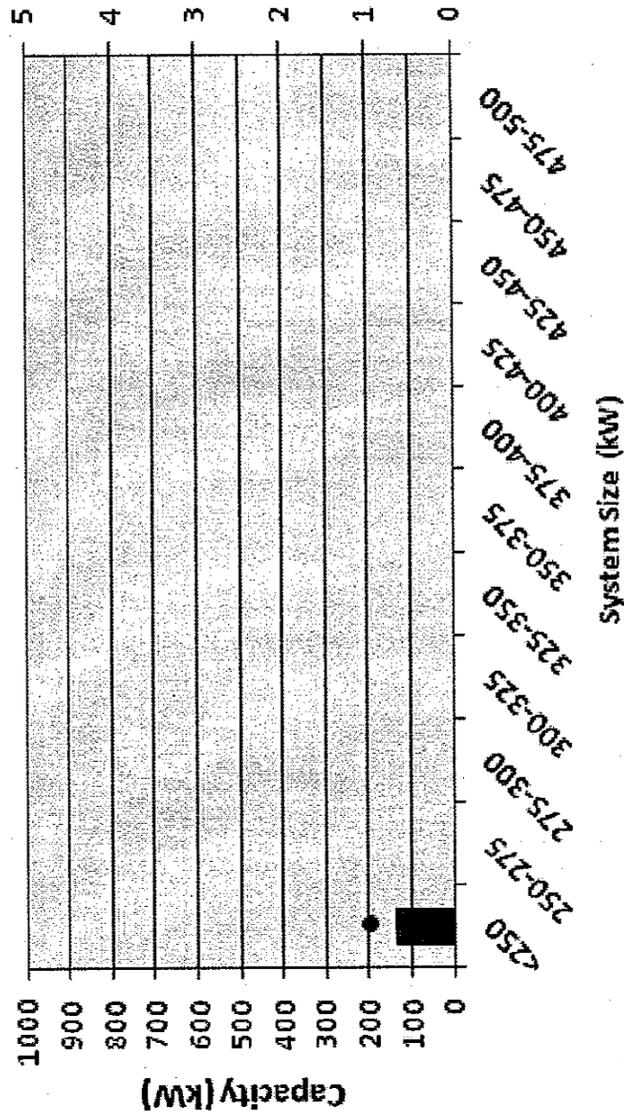


Figure 3. Tier 2B Solicitation Results

As with the other tiers, the Delaware workforce and equipment adders were utilized by a majority of the bidders. All but one of the ten under-development projects submitted for Tier 2B used both Delaware equipment and labor suggesting that these bonuses were sufficient to drive use of in-state resources. Table 8 presents the equipment and labor statistics for Tier 2B.

Table 8. Tier 2B Delaware Labor and Equipment Statistics

	Capacity (kW)	Number of Systems
Non-Delaware Labor and non-Delaware Equipment	1,155.7	5
Delaware Labor and non-Delaware Equipment	998.9	2
Delaware Labor and Delaware Equipment	3,027.1	8

1.1.4. TIER 3 MARKET RESPONSE (>500-2,000kW – COMPETITIVE PROCUREMENT)

Like Tier 2B, the Tier 3 solicitation was competitively bid using a pay-as-bid price auction. The maximum allowable system size in Tier 3 was 2,000 kW while the lower bound was greater than 500kW. Seven systems with a total capacity of 6,698.2kW bid into the Tier 3 auction. Of these, three systems were awarded contracts for the full capacity of their bids and one project accepted a partial contract. These four projects totaled 2,828.3 kW. More than 5,700 kW of capacity did not receive contracts. Table 9 provides a breakdown of systems submitting bids for the Tier 3 auction.

Table 9. Tier 3 Solicitation Statistics

	Number of Systems	Effective SRECs	Capacity (kW)
Accepted	3.5	4,500.1	2,828.3
Under Development/Proposed	3	3,986.1	2,496.9
Operational	.5 ¹⁴	514.0	331.4
Not Accepted	3.5	5,719.8	3,870.0
Under Development/Proposed	2	2,228.4	1,421.3
Operational	1.5	3,491.4	2,448.6
Tier Total	7	10,219.9	6,698.2

Pricing results for Tier 3 are as follows:

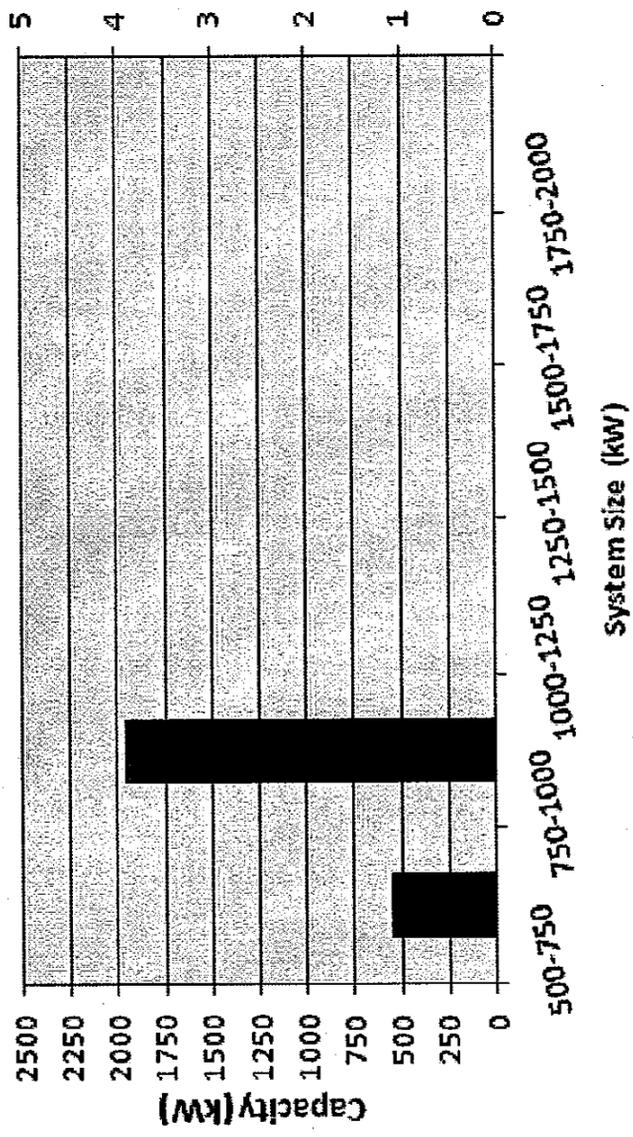
- The weighted average bid price for all systems in Tier 3 was \$185.10 per effective SREC,
- The weighted average winning bid was \$154.35 per effective SREC,
- The highest winning bid was \$175.57 per SREC,
- The lowest accepted bid was \$148.00 per SREC,
- The weighted average bid price for operational systems was \$210.07, and
- The weighted average bid price for under development systems was \$169.00.

Of note, the largest under-development system in the solicitation submitted the highest bid price. Given the limited sample size, it is difficult to characterize any clear pricing trends in the Tier 3 auction data set. Figure 4

¹⁴ This project was originally bid as a single, 1,550 kW system, however the system was only awarded a contract for 331kW as its full bid would have exceeded the Tier 3 SREC volume limit.

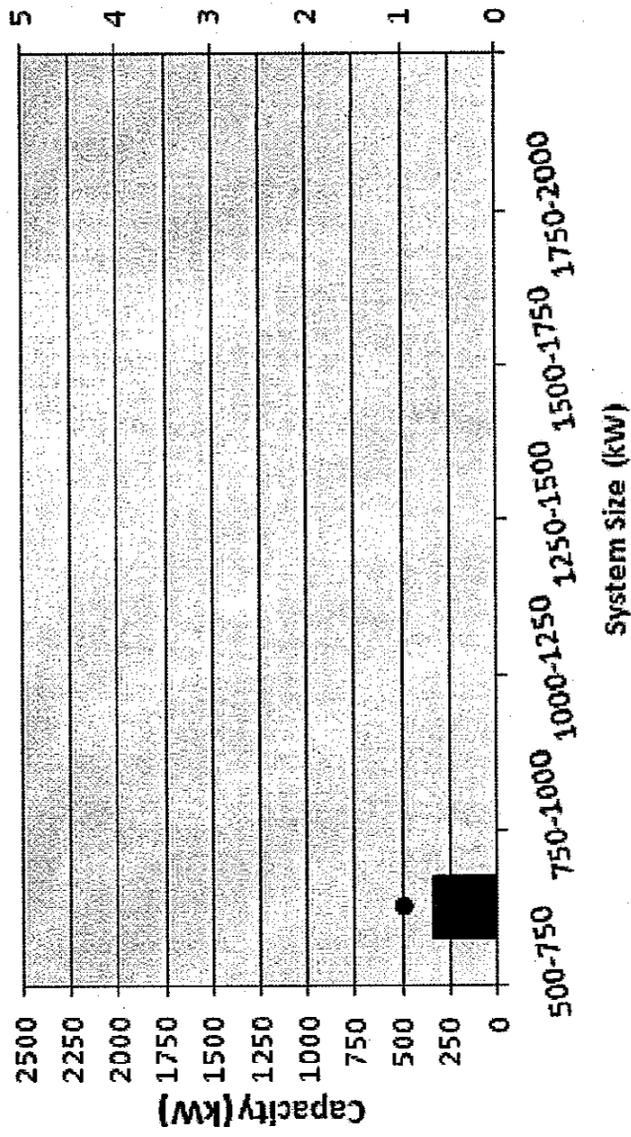
provides a breakdown of system bids within the Tier 3 solicitation. While projects were submitted across the tier size range, all under-development projects were less than 1,000kW.

Accepted Under Development



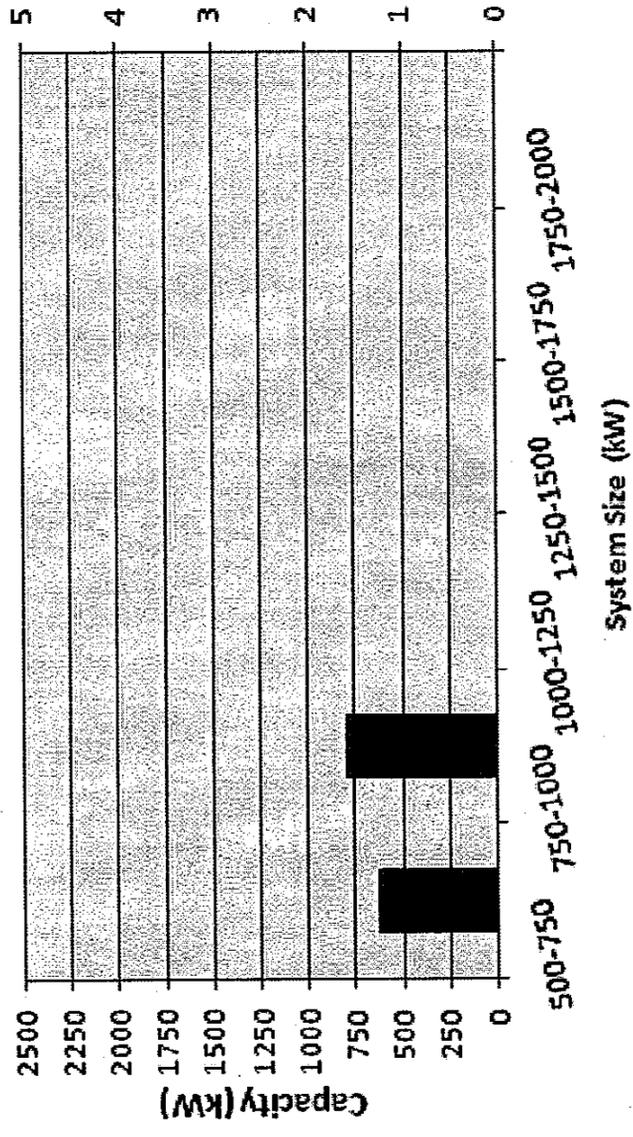
■ Capacity (kW) ● Number of Systems

Accepted Operational



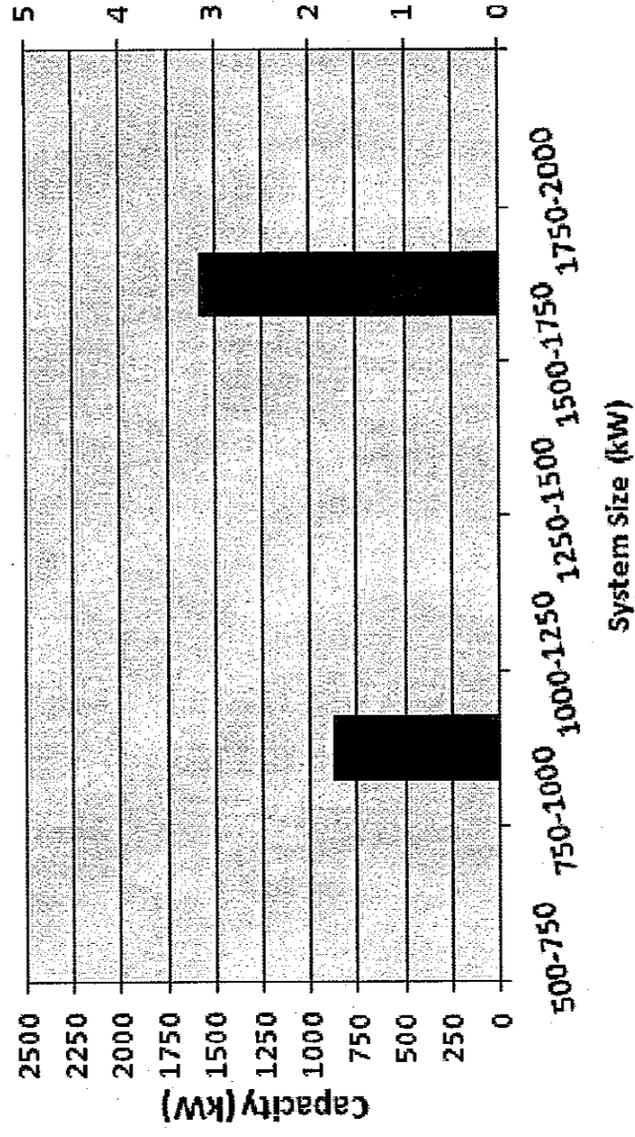
■ Capacity (kW) ● Number of Systems

Not Accepted Under Development



■ Capacity(kW) ● Number of Systems

Not Accepted Operational



■ Capacity (kW) ● Number of Systems

Figure 4. Tier 3 Solicitation Results

One developer was awarded three of the four contracts awarded under Tier 3, totaling 88.5 percent of the SRECs procured under Tier 3. While not a commentary on any particular developer, such a high concentration of one tier being awarded to a single project developer may present a risk to ratepayers in the event that the developer is unable to meet their contractual obligations.¹⁵

As with the other pilot tiers, developers actively pursued the Delaware labor and equipment adders. Table 10 present statistics on market use of in-state resources in Tier 3.

Table 10. Tier 3 Delaware Labor and Equipment Statistics

	Capacity (kW)	Number of Systems
Non-Delaware Labor and non-Delaware Equipment	1,580	1
Delaware Labor and non-Delaware Equipment	548	1
Delaware Labor and Delaware Equipment	4,570	5

1.2. SHOULD DELAWARE HAVE A SOLAR POLICY WITH DIFFERENTIATED INCENTIVES?

The 2010 Amendments to the Renewable Energy Portfolio Standards Act (REPSA) charged the Delaware Renewable Energy Task Force (RETF) with developing recommendations to the DPSC and others for the creation of policies to support the development of diverse renewable energy markets in the state. This authorizing legislation included guidelines for how the task force should craft future renewable policies. The 2010 amendments specifically tasked the RETF with developing recommendations for policies that meet the following criteria, among others:

- Establishes REC and SREC aggregation mechanisms and other devices to encourage the deployment of solar energy technologies in Delaware with the least impact on retail electricity suppliers, municipal electric companies and rural electric cooperatives,
- Minimizes REPSA compliance costs,
- Establishes mechanisms to maximize in-state solar renewable energy generation and local manufacturing, and
- Ensures that residential, commercial and utility scale PV and solar thermal systems of various sizes were financially viable and cost-effective instruments in Delaware (Delaware State Senate, 2010).

There is an inherent tension between some of these legislative requirements. For instance, national solar market data consistently shows larger systems are able to achieve economies of scale when compared to typical residential installations. Any incentive program exclusively focused on reaching a solar renewable portfolio goal at the lowest costs to ratepayers would likely seek to encourage the development of large-scale, low-cost PV installations. However, while larger utility scale systems may be more cost effective--leading to lower overall policy costs--they are likely to have a smaller effect on direct job creation, as less unit labor is required per installed watt. As several stakeholders have noted, reaching both the cost effectiveness and job creation goals of the REPSA requires a balanced approach to solar policy design (DPL, 2011). For the same reason, the legislative

¹⁵ The pilot program requires a bid deposit and includes a requirement that project owners commission systems under contract within 12 months (with the potential for extensions). This should deter project developers from failing to meet their SREC obligations, however unforeseen circumstances with individual vendors are possible. It should also be noted that, in the near term, the current oversupply of SRECs in the Delaware market may make this less of a concern.

mandate to create a diverse market that includes residential, commercial, and utility-scale PV systems is at odds with the requirement to minimize ratepayer cost impacts.

Several recent studies from the National Renewable Energy Labs, the Lawrence Berkeley National Labs and the U.S. Department of Energy have noted consistent difference in installed cost between residential, commercial and utility-scale PV systems, as seen in Figure 5 below (Barbose, Darghouth, Wiser, & Seel, 2011; U.S. DOE, 2011; NREL, 2011b). Given this industry consensus regarding installed cost differences between system size classes, providing differentiated incentives through a tiered SREC program is a reasonable approach to encouraging the development of a broad-based solar market.

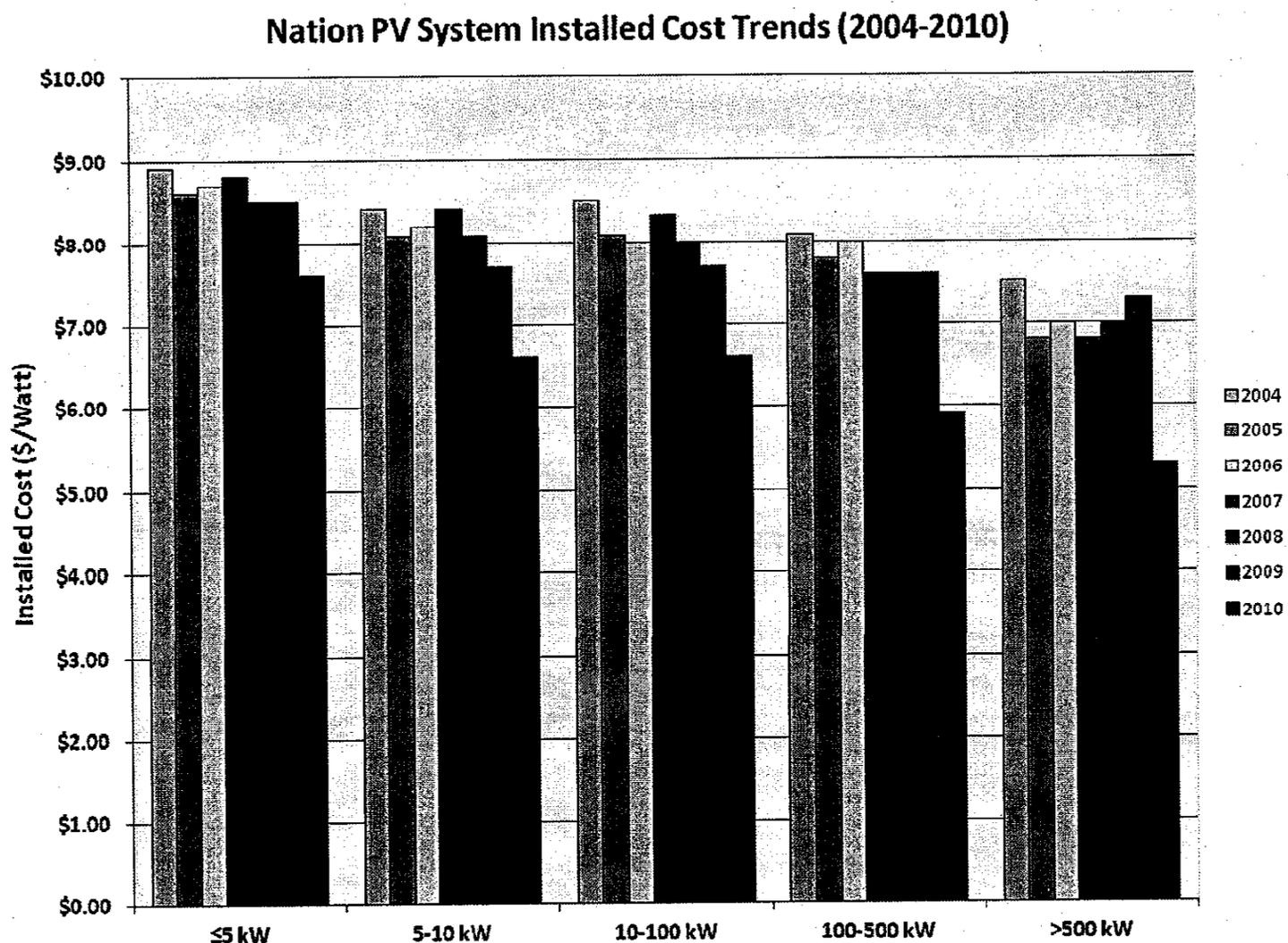


Figure 5. National PV Installed Cost Trends by System Size 2005-2010 (Barbose, Darghouth, Wiser, & Seel, 2011)

The installed cost differences found between system class sizes are not the only differences impacting PV project costs. Differences in federal incentives also affect system economics. Importantly, federal tax benefits from asset depreciation are not available to PV systems owned by residential or non-profit entities. Under current law, PV systems owned by commercial entities are eligible to depreciate their investments under the five-year MACRS (Modified Accelerated Cost Recovery System) schedule.¹⁶ This added tax benefit can considerably improve project economics for a commercially-owned system. Federal depreciation can allow system owners to recover 26 percent of the projects installed cost (Bolinger, 2009). Because this benefit is not available to residential or non-profit PV system owners, policy makers in some states have tailored PV system incentives to account for this difference by providing added incentives for residentially-owned systems.

Given the well established installed cost differences amongst system size classes, as well as other differences that affect project economics, it is reasonable to have a solar policy that provides differentiated incentives to

¹⁶ Additionally, systems installed in 2012 are eligible for fifty-percent bonus depreciation.

solar projects with different ownership types and/or size classes. This is in keeping with the goals of the 2010 REPSA Amendments to both develop a broad-based solar market and use renewable energy policy as a tool for economic development. Tiered incentive programs are a well established best practice, and most leading U.S. and international solar incentive programs have utilized differentiated incentives to support the growth of diverse solar markets. The following section will review the tiering strategy used in several prominent solar markets.

1.3. COMPARATIVE ANALYSIS OF DELAWARE PILOT TIERS

The following sections compare the incentive tiering structure of the Delaware SREC Pilot to incentive programs in leading national and international markets.

1.3.1. U.S. STATE POLICIES

As with the Delaware Pilot, a number of U.S. states have sought to encourage the development of a diverse solar market that allows wide participation amongst system types and sizes. Some of these states have chosen to provide differentiated incentive levels within a single policy type (i.e. creating tranches within a competitive SREC auction), while others have chosen to provide rebates to residential systems while allowing all systems to sell credits into a non-differentiated SREC market. Table 11 below lists several East Coast solar incentive regimes and the breakdown between incentive size classes within these markets.

The Connecticut solar incentive strategy provides rebates and performance-based incentives for residential systems, differentiating between resident-owned and third-party owned systems. Connecticut also has a utility long-term contracting program that is differentiated into three tiers. In Massachusetts, all PV system owners are eligible to take part in the state's SREC market on an equal footing, however the state provides a rebate program for residential and small commercial systems funded through a utility systems benefit charge.

Each New Jersey utility operates a long-term SREC contracting program. Three of those utilities (ACE, REC and JCP&L) operate a three-tiered long-term contract auction solicitation.¹⁷ PSE&G operates a separate program for long term contracts for larger systems and also operates a residential solar loan program that uses an innovative SREC repayment mechanism. Pennsylvania utilities operate occasional SREC auctions for systems larger than 200kW and also have been authorized to negotiate bi-lateral contracts for systems smaller than 200 kW. Finally, Rhode Island has a distributed generation long-term contracting auction program that is run through National Grid.

¹⁷ It has been noted that the solicitation tiers for this program mirror the tiers of the Delaware SREC pilot.

Table 11. East Coast Solar Incentive Policies

State	Incentive Program	System Size (kW)
Connecticut	Residential – Direct Ownership Rebate Program	Any residential
	Residential – Third Party Performance Based Incentive	Any residential
		up to 100
	RPS ZREC Carve Out	100-250 250-1,000
Massachusetts	Commonwealth Solar II Rebate Program	<15 (5kW rebate limit)
	RPS SREC Carve Out	<6,000
New Jersey (PSE&G)	Non-residential Long Term Contract Program	up to 150 150-500 500-2000
	Residential System Loan Program	Residential Systems
		< 50
New Jersey (ACE, JCP&L, REC)	Non-Residential Long Term Contract Program	50 to 500 500 to 2,000
Pennsylvania	Small Scale Utility Procurement	<200
	Long Term SREC Utility Procurement	>200
Rhode Island	Distributed Generation Contract Procurement	10-150 150-500 500-5,000

Some of these policies, such as PSE&G in New Jersey and the incentive programs in Connecticut, have chosen to make a distinction between residential and commercial system incentives, while others, such as Massachusetts, have chosen to provide added incentives to smaller systems regardless of ownership type. As the chart indicates, there is no common approach across the East Coast solar policies as to the appropriate number of incentive tiers or the most appropriate size categories within tiers.

1.3.2. INTERNATIONAL POLICIES

Most of the largest global solar markets are supported by tiered standard offer programs. Table 12 shows the incentive tiering breakdown from Germany, Spain, Italy, and Ontario. These standard-offer markets represent nearly 60 percent of global PV installations in 2011 (EPIA, 2012).

Table 12. International Solar PV Incentive Policies

Country	Incentive Tier	System size (kW)	Country	Incentive Tier	System size (kW)
Germany	Ground Mount	<30	Spain	Ground Mount	All
		30-100		Rooftop	<20
	100-1,000			>20	
	Rooftop	>1,000			1-3
		<30			3-20
30-100			Ground Mount	20-200	
Ontario, Canada	Rooftop	100-1,000			200-1,000
		>1,000			1000-5,000
		<10			>5000
	Ground Mount	10-100	Italy		1-3
		100-500			3-20
>500				20-200	
Ground Mount	<10			Rooftop	200-1,000
	10-500				1,000-5,000
	500-5,000			>5,000	
		>5,000			

As the table shows, each of these solar markets provides a differentiated incentive for a range of system sizes and types. One notable difference between the U.S. state incentive programs and these international policies is the consistent differentiation between incentives for ground mounted and rooftop PV installations. As with the previously reviewed East Coast markets, the international markets have a wide variety of tiering classifications, although the international programs tend to have lower upper-bounds for the smallest system size classes. It should be noted that these global markets are each significantly larger than the East Coast markets reviewed in the previous section. For instance, the German and Italian markets installed 7.5 GW and 9.3 GW of solar respectively in 2011 compared to 305 MW for the New Jersey market (EPIA, 2012; New Jersey Clean Energy Program, 2012). These more developed solar markets may have the breadth to support robust participation in each of the tariff pricing tiers.

1.4. COMMENTS ON THE SREC PILOT TIERS

As seen by the examples from both the East Coast and international markets, tiered solar incentive programs are a common practice and have become the norm for leading solar policies. Some East Coast markets have chosen to provide differentiated incentives for residential PV systems. Project economics for residential installations are markedly different than commercially owned systems, as residential owners cannot take advantage of the

benefits of accelerated depreciation.¹⁸ Given this, state policy makers may wish to consider whether a single administratively set price is appropriate for both residential and small commercial systems in the smallest program tier, or whether incentive programs such as the Green Energy Fund should be specifically designed to overcome the differential between federal incentives between residential and commercial systems.¹⁹ State policy makers may also wish to explore lowering the smallest incentive tier in the next SREC solicitation round, as project economics for 7.5kW residential systems are markedly different from 50kW commercial installations.

Successful solar policies can have widely varying tiering structures with a diversity of system size classes and number of tiers. Given the oversubscription of each of the pilot tiers, it can be concluded that future procurements using a similar tiering structure and SREC allocation would lead to a broad-based and diverse solar market in Delaware. However, the five-tiered Delaware pilot is unique amongst the East Coast incentive programs reviewed for this report. Given the relatively small size of the Delaware SREC market, a reduction in the number of procurement tiers may be warranted to both improve regulatory simplicity and create a more competitive auction process. While each of the pilot tiers were oversubscribed, the number of projects bidding into Tiers 2B and 3 was limited. Eight projects bid into Tier 3. These eight projects were owned by only five individual owners. A similarly limited number of projects and owners bid into Tier 2B, with 15 projects bidding into that auction tier representing nine individual owners. The limited number of owners and projects bidding into these tiers may be a potential cause for concern for regulators. While the prices awarded under the competitive tiers are in line with other East Coast markets (See Chapter 2), and there is no indication of collusion in bidding, future solicitations with similarly limited number of participants in the competitive tiers could present opportunities for project owners to game the system.

As previously noted, the average weighted SREC prices for accepted contracts in Tier 2B was lower than the winning average weighted price for Tier 3 (\$131.13 and \$154.35 respectively). In addition, several systems that were not awarded contracts under Tier 2B submitted bids would have been awarded contracts had they entered the Tier 3 auction. The overall policy cost of the program would have been reduced by creating a single competitive procurement tier for all systems greater than 250 kW (although this would have led to only one Tier 3 project receiving a SREC contract for its full bid volume). Given the limited number of SREC that will be procured by Delmarva in the coming years, policymakers may wish to consider reducing the number of procurement tiers in order to create a more competitive solicitation.

A straw proposal for revising the solicitation tiering has been submitted to the RETF by the Delaware Solar Energy Coalition (DSEC). This proposal maintains the four-tiered approach of the previous solicitations, but adjusts the thresholds between tiers. Table 13 shows the tiering structure from the DSEC proposal. A full review of the proposed structure is beyond the scope of this analysis. However, the suggested approach reduces the upper bound for the smallest program tier from 50kW to 25kW. This adjustment would benefit residential system owners, as systems between 40 and 50 kW reserved a significant proportion of the SREC volume in the last solicitation. Lowering commercial system participation in this tier may also be warranted as the administratively set rates for Tier 1 were modeled using a residential system that cannot take advantage of depreciation tax benefits.

¹⁸ Third-party owned residential PV systems can benefit from accelerated depreciation and any differentiated policy that seeks to provide added incentives for residential systems in order to compensate a residential owner's inability to take the federal depreciation benefit may wish to factor this into the policy making process.

Table 13. DSEC Tiering Proposal and Pilot Program Tiering

	Pilot Solicitation	DSEC Proposal
Tier 1	0-50	0-25
Tier 2A	50-250	25-100
Tier 2B	250-500	100-300
Tier 3	500-2000	300-2000

Table 14 below shows the capacity and number of projects submitted in each tier under the existing program rules and also applies the DSEC tiering proposal to the data from the pilot solicitation. Under the DSEC-proposed strategy, the recently completed pilot procurement would have had significantly more systems and capacity taking part in the competitive tiers. Assuming SREC allocations between tiers were held constant, this approach would also have led to a lower weighted average Tier 3 SREC contract price (\$138.18 vs. \$154.35), potentially reducing the cost of the overall policy. While pricing data does not exist for Tier 2A systems that would have been included in Tier 2B under the alternative DSEC proposal, the increase in the number of systems bidding into the competitive 2B tier may also have resulted in a lower average contract price.

Table 14. Pilot Program Data and the DSEC proposal

	Pilot Solicitation		DSEC Proposal	
	Capacity (kW)	Number of Systems	Capacity (kW)	Number of Systems
Tier 1	4722.2	483	3163.2	444
Tier 2A	6810.5	43	2652.1	53
Tier 2B	5181.7	15	6337.0	33
Tier 3	6698.2	8	11260.3	19

CHAPTER 2. ANALYSIS AND EVALUATION OF PILOT PRICES

Under the SREC Pilot, projects eligible for Tier 1 (50 kW and under) and Tier 2A (greater than 50 kW and less than 250 kW) were awarded contracts with administratively-set prices recommended by the RETF. The prices were determined through an iterative cash-flow modeling process. This section will review key modeling assumptions and will also benchmark Tier 1 and Tier 2A's administratively-set prices against the auction-determined prices from Tier 2B and Tier 3 as well as against long-term contracting programs in other states.

2.1. REVIEW OF THE PV PLANNER TOOL

The University of Delaware's PV Planner software tool was used by the RETF to determine the administratively-set SREC prices for Tier 1 and Tier 2A. Developed by the university's Center for Energy and Environmental Policy (CEEP), PV Planner can be used to model a range of potential solar PV installation variables and allows users to develop highly customized system performance forecasts and financial pro forma.

Because PV Planner is not publicly accessible, the sensitivity analyses conducted for this chapter used the National Renewable Energy Laboratory's (NREL) System Advisor Model (SAM) as an alternative modeling tool. SAM is a flexible spreadsheet modeling program that uses industry standard financial modeling methodologies to evaluate a range of renewable energy project types, including solar PV (NREL, 2012b). For this analysis, an Excel version of the SAM model was adapted to match how PV Planner was used by the RETF to determine administratively-set prices. The SAM Excel model replicated the PV Planner results with only minor differences.²⁰ The negligible difference in PV Planner and SAM Excel modeling outputs are largely attributable to factors such as input rounding and slight differences in modeling approaches to tax effects. Given that SAM and PV Planner were able to produce similar results, this further confirms that the PV Planner cash-flow modeling methodology is consistent with standard modeling approaches.

2.2. REVIEW OF MODELING ASSUMPTIONS & EVALUATION OF FINANCIAL MODEL USED TO SET PRICES

The determination of administratively-set prices requires policy makers, regulators, and other stakeholders to develop consensus model inputs that best reflect current market conditions and policy objectives. During the price setting process, the RETF worked to develop modeling inputs for a range of market metrics. These metrics were drawn from national surveys, datasets from state incentive programs, and feedback from local experts. Table 15 below list some of the modeling inputs used to develop the Tier 1 and Tier 2A administratively-set prices.

Tier 1 and 2A SREC prices were set based on target project financial metrics. For the Tier 1 residential system, the SREC price was set to result in a target 9.55 year project payback. The Tier 2A SREC prices were set to return a 12.69 percent internal rate of return (IRR) for the modeled system. This target IRR is similar to target IRRs used in other PV long-term contract rate setting proceedings.²¹

²⁰ Modeled results for Tier 1 using PV Planner found a system payback of 9.55 years. This result was replicated in the SAM Excel model with only de minimus changes to the provided inputs (largely due to rounding). Tier 2A PV Planner modeling reported an expected internal rate-of-return (IRR) of 12.69 percent with a minimum debt service coverage ratio (DSCR) of 1.22. Using the SAM Excel model with the same inputs and minor alterations resulted in an IRR of 12.71 percent and a minimum DSCR of 1.22, closely matching the PV Planner model.

²¹ The recent Rhode Island DG Standard Offer used a target 13 percent IRR while the Vermont SPEED modeling project used a 12.13 percent IRR (Rhode Island Office of Energy Resources, 2011; Vermont Public Services Board, 2009).

Table 15. Prices Setting Modeling Inputs

Inputs	Residential (Tier 1)	Commercial (Tier 2A)
Size of PV Array (kWp)	7.5	250
Slope of Array	25°	10°
Array Orientation	South	South
PV System Cost in \$/W _p	5.80	4.75
Inverter Replacement Year	13	13
Inverter Replacement Costs in \$/kW	\$700	\$534
Annual Maintenance and Insurance Costs	\$175	\$8,375
Annual Cost Escalation Rate	2%	2%
Debt Fraction (before ITC or Treasury Grant)	56%	51%
Loan Interest Rate	6%	7%
Loan Duration (years)	10	10
Combined Incremental Federal and State Tax Rate	33%	40%
Evaluation Period (years)	25	25
Transaction Costs for Treasury Grant Monetization	0%	10%
State Grant (Green Energy Fund)	\$7,131	-
Net Metering Rate (cents/kWh)	14	10.5
Annual Net Metering Rate Escalation	2.00%	2.50%
Is Income from SRECs Taxable?	Yes	Yes
SREC Price Year 10 through 20	\$50	\$50
SREC Multiplier for Instate Labor	1.1	1.1
Ownership Structure	Direct ownership	Power purchase agreement
Property Tax Included	N	N
Federal Depreciation	N/A	5-Yr MACRS (no bonus depreciation)
State Depreciation	N/A	5-Yr MACRS
Residential Loan Interest Deductible	Y	N/A
First Year SREC Production	9.6	308.5
Modeled project payback/return	9.55 year payback	12.69% IRR

Many of these variables, such as system costs and performance, can vary widely even within single state solar markets. The following sections will examine several of the modeling inputs that were used to set the Tier 1 and Tier 2A SREC prices and compare those modeling assumptions to either actual data from the SREC Pilot or to data from other comparable state solar markets. Where appropriate, sensitivity analyses are conducted to determine how project economics might be affected by changes to the modeled variables.

2.2.1. SYSTEM COSTS

Modeling assumptions related to installed system costs are among the most influential factors in a cash flow model. Datasets from many of the mid-Atlantic solar markets with current 2012 costs are not publicly available. This is particularly challenging as PV module costs have declined nearly thirty percent over the course of the last

Figure 6 below show scatter plots, by system size, for the installed costs of PV systems less than 50 kW installed in 2012 in Massachusetts and California. As these figures show, there is significant price variability for systems less than 50 kW in these markets. The regression lines on each graph also show the limited economies of scale associated with larger system sizes within this size class.²⁴

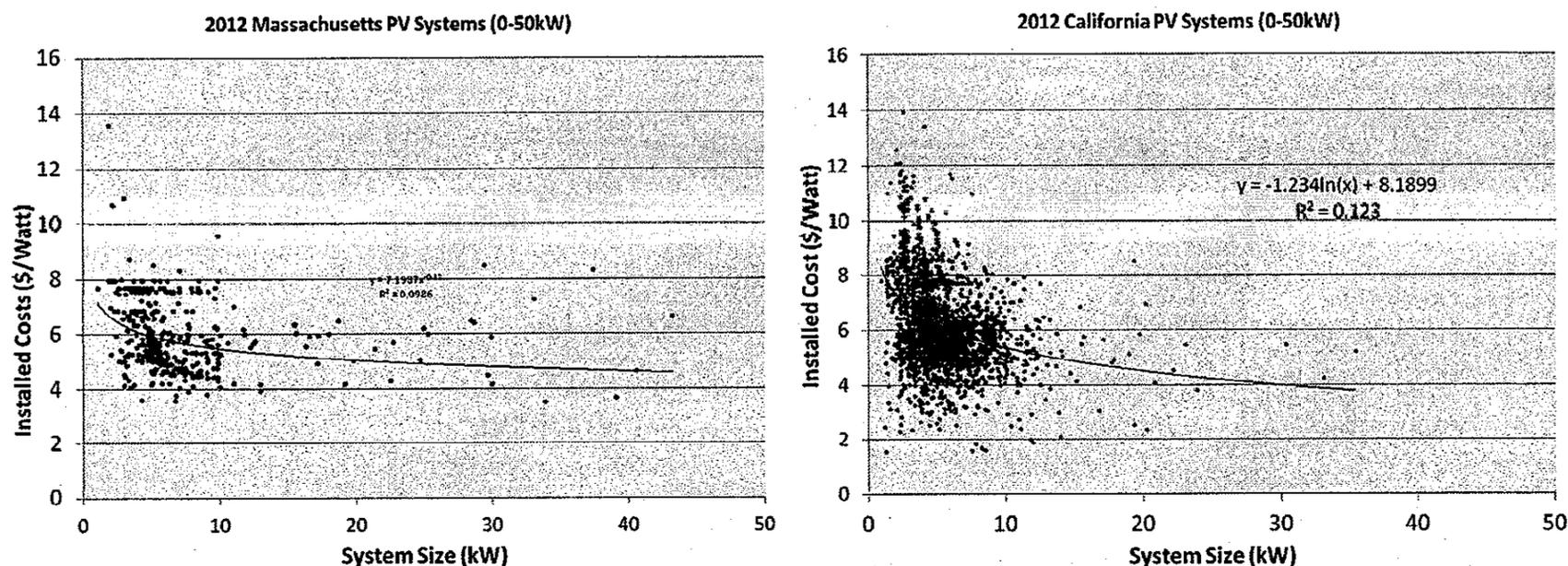


Figure 6. Installed Costs for PV Systems Less than 50 kW Installed in 2012 in Massachusetts and California (Mass. DOER, 2012; California Solar Initiative, 2012)

Given this wide system cost variability, project owners in the Tier 1 lottery that may have been at the lower end of the installed cost range could capture substantially better returns than owners at the average modeled cost. The sensitivity analysis in Table 17 below shows the investment paybacks for Tier 1 systems at the \$5.58 average Delaware installed costs and also at \$1.23 per watt increments above and below that value. As the table indicates, system owners with installed costs at the lower end of the range would see financial paybacks below three years (holding all other modeling assumptions constant).

Table 17. Tier 1 Model Installed Cost Sensitivity Analysis

	Installed Cost (\$/watt)	Modeled Payback
Tier 1 Assumption	5.80	9.55
Average +\$1.23	6.81	15.15
2012 Delaware Average Installed Costs	5.58	7.11
Average -\$1.23	4.35 ²⁵	2.65

The substantial variability in solar PV installed costs, and the potentially significant swings in project economics that result from this variability, illustrate the challenge in accurately modeling and setting incentive prices that meet specific financial thresholds. It also suggests that policy makers may wish to consider setting prices using

²⁴ The trend line on each graph shows the modest price discounts associated with increasing system sizes in each dataset. As the low R² value indicate, system size only minimally explains the installed cost variances within this size classification in these markets.

²⁵ Note: While this value may seem well below market average costs, 36 percent of installations in the Delaware Green Energy Program databases have costs below \$5 per watt. Similarly, 25 percent of installations in the Massachusetts database are below \$5 per watt while 23 percent of systems in the California database are below \$5 per watt.

installed cost assumptions that are below market average prices in order to limit financial returns for low-cost installations.²⁶

2.2.1.2. TIER 2A SYSTEM COST REVIEW

Limited market cost data exist for Tier 2A scale systems either from Delaware or from other U.S. markets. Of the previously discussed data sets, only the Massachusetts SREC database has a substantial number of recently installed Tier 2A sized systems. Table 18 lists developer-reported installed cost metrics for the 35 systems installed in Massachusetts in 2012 in the Tier 2A size class (50 kW to 250 kW). As the table indicates, the market for projects in this size class in Massachusetts shows similar cost variability as the Tier 1-sized market.

Table 18. 2012 50-250kW PV Systems Installed in Massachusetts

	Massachusetts
Number of "Tier 2A" Systems	35
Total "Tier 2A" Capacity	4,251.5
Weighted Average Cost \$/Watt	\$5.57
Simple Average Cost \$/Watt	\$5.44
Standard Deviation	\$1.51

While it is difficult to draw conclusions from other state markets, data from Massachusetts suggest that the Tier 2A modeled cost of \$4.75 could be below market average installed costs in Delaware. However, the limited Massachusetts dataset also has a number of systems with costs well below the \$4.75 modeled costs suggesting that systems in this cost range could be possible in the Delaware market.

Table 19 below shows expected IRRs for systems with installed costs \$0.75 above and below the \$4.75 used for PV Planner for Tier 2A systems. As with the Tier 1 systems, modeled financial returns are highly sensitive to system installed costs.

Table 19. Tier 2A Modeled Installed Cost Sensitivity Analysis

	Installed Cost (\$/watt)	Modeled IRR
Modeled Cost +\$0.75	5.50	6.9%
Modeled Average Cost	4.75	12.7%
Modeled Cost -\$0.75	4.00	21.1%

2.2.2. ARRAY SIZE

The modeling assumptions for the administratively-set prices included a representative 7.5 kW Tier 1 system. This system size is in line with a typical residential PV system in the Green Energy Fund program. However, the average system size for projects entering the Tier 1 lottery was 13.6 kW. As mentioned in Chapter 1, a number of systems just below the 50 kW system size limit submitted entries for Tier 1, and these 13 systems impacted the Tier 1 average system size. For reference, the average system size for Tier 1 lottery entrants 25kW and smaller (one proposed size limit for the next pilot round) was 8.23 kW. The average system size for the Tier 2A lottery was 158.4 kW, almost 100 kW smaller than the representative system modeled as part of the prices setting exercise.

²⁶ The Rhode Island DG standard offer tariff rate setting process explicitly sought to set rates based on lower-than-average market installation costs (Rhode Island Office of Energy Resources, 2011).

The size of the system modeled as part of the administrative price setting exercise was considerably different than the average system size entering the lottery; however, it is unlikely that the differences between the modeled system and the applicant systems made a material difference in the returns seen by project owners as most of the modeled input factors tend to scale with project size.

2.2.3. CAPACITY FACTOR, SLOPE AND AZIMUTH

System capacity factors are a key driver of project financial returns, and system tilt and azimuth are two of the major factors that affect installation capacity factors. The modeling assumptions included a due-south system orientation for both classes and a 25 degree and 10 degree tilt for Tier 1 and Tier 2A respectively. As Table 20 shows, average tilts and azimuths for Tier 1 closely matched modeling assumptions (25 degrees and 180 degrees). Averages for Tier 2A submissions closely matched the modeled azimuth (180 degrees) but differed on system tilt (10 degrees). This higher-than-expected value may, be a result of a significant number (11) of ground mounted systems entering the Tier 2A lottery.

Prices were set based on a modeled 14.6 capacity factor for the Tier 1 system and a 14.1 percent capacity factor for the Tier 2A system. Systems entering the Tier 1 lottery reported an average 13.7 percent capacity factor, while systems submitting applications for Tier 2A reported an expected 14.25 percent capacity factor. For the modeled Tier 1 7.5kW system, this difference in capacity factor would result in a reduction of more than 400 kWh in the first year of production. Conversely, the modeled Tier 2A system would be expected to produce about 1,385 kWh less than a 250kW system with the average capacity factor reported by Tier 2A applicants.

Table 20. Average System Sizes, Tilts and Azimuths for Tiers 1 and 2A

	Tier 1		Tier 2A	
	Modeled	Actual	Modeled	Actual
Average System Size	7.5 kW	13.6 kW	250	161 kW
Tilt	25	26.4	20	19.1
Azimuth	180	181.4	180	181.3
Capacity Factor	14.6	13.7	14.25	14.1
	(1,283 kWh/kW)	(1,202 kWh/kW)	(1,248 kWh/kW)	(1,234 kWh/kW)
Reported Capacity Factor Standard Deviation		±0.92%		±0.98%

Differences between modeled and expected capacity factors can affect project paybacks and IRRs. Table 22 and Table 21 below show the expected system paybacks and IRRs for modeled PV systems using the self-reported capacity factor information from the SREC Pilot dataset. The first line of each table reports the modeled capacity factor value. The remaining rows of each table provide a sensitivity analysis that shows financial metrics for the average system reported capacity factor along with capacity factor values that are one deviation above and below the values average value reported in each tier.

Table 21. Capacity Factor Sensitivity Analysis for Tier 1 Systems

	Capacity Factor	Payback (Years)
Modeled Value and Reported Value Plus One Standard Deviation	14.6%	9.55
Reported Value	13.7%	11.20
Reported Value Minus One Standard Deviation	12.8%	14.05

Differences between modeled average capacity factors and reported capacity factors are likely partially attributable to a significant number of PV systems which applied to the Tier 1 lottery that had azimuths near either due-east or due-west.²⁷ Because system production drops off non-linearly as azimuths approach 90 or 270 degrees, these systems can disproportionately impact the average system capacity factor in the dataset.

Table 22. Capacity Factor Sensitivity Analysis for Tier 2A Systems

	Capacity Factor	IRR
Modeled Value	14.1%	12.7%
Reported Value Plus One Standard Deviation	15.2%	16.8%
Reported Value	14.3%	13.5%
Reported Value Minus One Standard Deviation	13.3%	9.8%

As previously mentioned, differences between modeled and reported capacity factors for Tier 2A are likely due to the significant number of ground-mounted systems applying for this Tier.²⁸ As would be expected, the ground mounted system in the Tier 2A applicant database reported higher system tilts than the roof-mounted systems in the same tier.²⁹

Compared with other factors evaluated in this chapter, differences between reported and modeled capacity factors have a relatively slight impact on project financial returns.

2.2.4. ANNUAL OPERATIONS, MAINTENANCE, AND INSURANCE

There are relatively few comprehensive studies of representative PV system operations and maintenance (O&M) costs available. The National Renewable Energy Laboratories recently compiled a list of fixed O&M costs for a range of energy technologies including solar PV (NREL, 2011a). Information from this dataset formed the basis for the O&M costs used for the PV Planner model. The final modeled value annual O&M costs assumption (\$20.70 per kW-yr) is well cited and is also in line with installer-reported O&M costs from proceedings in Rhode Island.³⁰

²⁷ 81 systems reported azimuths either greater or equal to 230 degrees or less than or equal to 130 degrees.

²⁸ 11 of the 41 system entering the 2A lottery were ground mounts.

²⁹ Average reported capacity factors for ground mounted systems were 14.77 percent while roof mounted systems had an average capacity factor of 14.20 percent.

³⁰ An installer survey during the Rhode Island DG standard offer rate setting proceedings estimated O&M costs for 150 kW PV systems of around \$20/kW-yr. This value did not include insurance costs (Rhode Island Office of Energy Resources, 2011).

The Tier 2A model also included an additional annual cost for insurance set at 0.25 percent of installed costs. Like the O&M cost value, the insurance cost value was drawn from a National Renewable Energy Labs study (Speer, Mendelsohn, & Cory, 2010). The analysis in the cited study was based on a survey of national installers, and while this may or may not reflect market conditions in Delaware, the NREL study provides one of the few data points available on PV insurance costs.

2.2.5. INVERTER REPLACEMENT YEAR AND INVERTER REPLACEMENT COST

For both the Tier 1 and Tier 2A price setting exercises, an inverter replacement at the end of project year 13 was modeled. As mentioned in the report detailing the PV Planner input assumptions, inverters typically include 10-year standard warranties. However an inverter replacement in year 13 was modeled to avoid two inverter replacements during the 25 year project life. The assumption that an inverter will live past its warranted life is a reasonable assumption and replacing the inverter in year 13 instead of year 10 does not significantly affect project economics.

Inverter cost assumptions were based on a 2012 price of \$700 per kW for the Tier 1 residential system and \$534 per kW for the Tier 2A commercial system. A two percent inflation rate was applied to these costs for a projected year-13 cost of \$906 and \$691 per kW for the residential and commercial systems respectively. These values are in line with current inverter market surveys and area reasonable model inputs (SolarBuzz, 2012). This value did not attempt to forecast potential inverter price declines related to industry expansion. This is understandable given the challenges associated with predicting technology costs more than a decade in the future.

Another growing market trend that could influence the accuracy of this modeling assumption is the more widespread use of long-term warranties for PV system inverters. A number of leading inverter manufacturers are now offering extended warranties of up to 20 years (SMA, 2012; Fronius, 2012). No reliable market data exists as to what portion of system owners are choosing extended warranty options. However if a sizeable number of Delaware solar project developers are opting for this added warranty protection, then project owners will not bear the costs of inverter replacement during the first 20 years of the project life. A recent survey of industry experts estimated that extended inverter warranties can range from \$150 per kW for small residential systems to \$100 per watt for large utility-scale projects (NYSERDA, 2012). Under the modeling assumptions used in the administratively prices-setting process, a Tier 2A project with an upfront extended warranty cost of \$125 per kW and no inverter replacement during the project life would have an IRR of 14.3 percent.

2.2.6. OTHER INCENTIVES: TREASURY GRANT MONETIZATION COSTS AND STATE REBATE

Inputs to the administratively-set prices included a DNREC Green Energy Fund rebate of \$7,131 for residential systems. This value is discounted from the current rebate levels as it accounts for extended time delays in receiving program funds. This modeled discount was set to account for financing costs associated with long rebate wait times. Green Energy Fund rebates are a key factor in the economics of residential systems in Delaware even with the administratively set SREC prices. Without the availability of Green Energy Fund rebates, the payback for the modeled residential system exceeds 15 years – a value that will likely not support a significant residential solar market.

The modeled commercial system includes a discount for monetization costs for the federal Treasury Grant/Investment Tax Credit. This assumption is in line with findings from the National Renewable Energy Labs' renewable energy finance survey regarding tax equity transaction costs (NREL, 2012a). Removing this 10 percent discount for the monetization costs of the federal incentives increases the project IRR from 12.71 percent to more than 18 percent, indicating that project developers that are able to efficiently use tax credits generated from PV projects would likely be able to achieve returns in excess of the target IRRs.

2.2.7. DELAWARE LABOR AND MANUFACTURED EQUIPMENT ADDERS

As discussed in Chapter 1, the Delaware labor and equipment adders were used by all of the contract awardees in both Tier 1 and Tier 2. Given the SREC volume bid by project owners applying for both these adders exceeded the total volume of SRECs in each tier, the workforce and equipment adders served as a de facto requirement for being awarded a contract under the lottery tiers.

The administratively-set-pricing modeled projects for both Tier 1 and Tier 2A that included the Delaware workforce adder, but did not include the bonus for Delaware equipment. Table 23 below shows representative IRRs and payback for hypothetical systems that included (1) no bonuses, (2) only the labor adder, and (3) both the workforce and equipment adders.

Table 23. Sensitivity Analysis for Delaware Workforce and Equipment Bonuses

SREC Adder	Tier 1 Payback (Years)	Tier 2A IRR
1.0	10.9	9.8%
1.1	9.6	12.7%
1.2	6.9	15.8%

As the table indicates, the inclusion of both adders increases project returns, though not as substantially as some other variables evaluated in this chapter. Given these values, and the high adoption rate of both Delaware labor and equipment in the first round of the pilot, it is likely that the existing legislatively mandated SREC multipliers will continue to drive demand for Delaware sourced labor and equipment.³¹

2.2.8. FEDERAL AND STATE DEPRECIATION

For both federal and state tax purposes, the Tier 2A representative system was modeled using the 5-year MACRS schedule. Under current law, systems commissioned in 2012 are eligible to take a first-year federal depreciation bonus of 50 percent. This tax benefit was not modeled as part of the administrative price setting exercise as stakeholders felt that many commercial system owners would not have the tax appetite to use all the available tax credits. Table 24 below provides representative project IRRs for systems using standard 5-Year federal depreciation both with and without the 50 percent bonus.

Table 24. Sensitivity Analysis of 50 Percent Bonus Depreciation

Federal Depreciation	IRR
5-Year MACRS	12.7%
5-Year MACRS with Bonus Depreciation	17.8%

As the table indicates, the 50 percent bonus depreciation is a substantial tax benefit for PV system owners that are able to fully monetize it. Given the existing data, it is unclear what proportion of the Tier 2A contract awardees will be able to take advantage of bonus depreciation.

2.2.9. OWNERSHIP STRUCTURE

While Tier 1 was modeled assuming the residential ownerships model, a significant portion of the total contracted capacity was awarded to larger-scale commercial systems. Several of these systems appear to be owned by third-party developers. Given the significant differences in types and availability of incentives between commercial and residential PV systems, allowing relatively large commercial PV systems to compete in the same lottery for the same level of incentive may not be warranted. This issue is partially mitigated by the

³¹ Note: This assumes that supply constraints do not affect the single Delaware manufacturer currently supplying qualifying panel.

state Green Energy Fund grant that, if awarded to residential system owners, can level economic returns between small commercial and residential systems.³² For reference, a 50 kW commercial system receiving the Tier 1 \$0.26/kWh SREC price would receive a rate of return around 15 percent, assuming similar modeling inputs as the Tier 2A administratively-set model. Policy makers may wish to monitor this issues going forward, particularly as the residential third-party ownership model is now common in many of the largest state solar market and residential third-party systems benefit from the same tax incentives as any commercially-owned PV system.³³

2.2.10. CONCLUSIONS ON MODEL INPUTS

The modeling inputs and assumptions used in PV Planner are generally in line with metrics from available datasets and assumptions used in standard offer price setting processes in other states. While these values are well within the bounds of typical assumptions, it is important to note that sensitivity analysis suggests that owners that are able to develop systems that slightly deviate from these averages on – even a few metrics – may be able to capture substantially higher rates of return than the target of 12.69% IRR or paybacks periods lower than the 9.55 years target. Future price setting exercises might consider using inputs that are towards the lower bound of each input metric or assume that project developers will be able to take advantage of all reasonably available incentives. Experience from other states shows that administratively set standard offers have typically been oversubscribed and, given that, regulators may wish to set prices based on “low-cost” modeled systems instead of “average-cost” modeled systems in order to incentivize market cost efficiencies.

2.3. HOW ADMINISTRATIVELY SET PRICES COMPARE TO TIER 2B AND TIER 3 AUCTION PRICES

Table 25 below lists price statistics for the Tier 2B and Tier 3 competitive auctions. As the table indicates, average winning bid prices for both the competitive tiers were significantly lower than for the administratively set prices. While drawing definitive conclusions from such a small data set can be misleading, the significant difference between the Tier 2A administrative pricing and the average winning Tier 2B pricing suggests that Tier 2A sized systems may be financially viable with lower SREC contract prices.

Table 25. Administratively Set Prices and Competitive Auction Prices.

Tier	SREC Price
Tier 1	\$260.00
Tier 2A	\$240.00
Tier 2B	
Tier 2B Minimum bid	\$120.00
Tier 2B Weighted Average Bid Per Effective SREC	\$154.02
Tier 2B Weighted Average Winning Bid Per Effective SREC	\$131.13
Tier 2B Maximum Bid	\$195.00
Tier 3	
Tier 3 Minimum Bid	\$148.00
Tier 3 Weighted Average Bid Per Effective SREC	\$185.10
Tier 3 Weighted Average Winning Bid Per Effective SREC	\$154.35
Tier 3 Maximum Bid	\$240.00

³² Note: Green Energy Fund rebates are available for small commercial systems; however program caps provide a lower maximum effective incentive than for smaller-scale systems.

³³ It is also important to note that energy revenue from third-party owned commercial systems are also subject to federal and state taxes that residential systems are not subject to.

Of note, the Tier 3 average winning bid price was above the average winning price from the Tier 2B auction. This result runs counter to empirical evidence that larger systems are able to leverage economies of scale resulting in lower overall project cost (Barbose, Darghouth, Wiser, & Seel, 2011). It is important to note that given the small number of individual systems bidding into the competitive auctions it is difficult to extrapolate conclusions about the Delaware PV market. Developers likely had a widely varying set of bidding strategies based on a number of project- and company-specific factors and, given the small number of bids received, fully understanding these factors would be necessary to draw conclusions about system prices relative to system sizes.

As mentioned in Chapter 1, two systems that would have been eligible for the Tier 2A lottery decided to submit competitive bids in the Tier 2B auction. One of these projects was accepted and the other had a bid price that was well under the Tier 2A administratively set price. This further suggests that pricing for Tier 2A may have been higher than necessary to stimulate market growth.

2.4. HOW ADMINISTRATIVELY SET PRICES COMPARE TO LONG-TERM CONTRACT PRICES IN OTHER STATES

Comparing long term SREC contract prices across jurisdictions is challenging as every state or utility program has unique program design features. Contract lengths, state tax treatments, net metering rates, and other incentives vary across jurisdictions and these variables can have a considerable affect on competitive auction results or administratively-set pricing models. Despite these caveats, benchmarking SREC Pilot contract prices against other leading solar markets provides important context for evaluating the overall success of the initiative. This section will compare results from the Delaware pilot to:

- The New Jersey multi-utility SREC auctions,
- The PSE&G Solar Loan Program,
- The Rhode Island Distributed Generation Standard Offer,
- Pennsylvania utility SREC long-term contract procurements.

It is also important to note that contract failure rates for competitive renewable energy auctions have been reported in some jurisdictions to be as high as 50 percent (Kreycik, Couture, & Cory, 2011). No publicly available data on the number of procured systems that have competed construction could be found for any of the solicitation programs reviewed for this section. This is an important caveat when reviewing auction price results, as winning bidders in some solicitations may not have adequately accounted for all project risks and may not be able to construct their projects at their winning contract price.³⁴

2.4.1. NEW JERSEY (ATLANTIC CITY ELECTRIC, JERSEY CENTRAL POWER & LIGHT, AND ROCKLAND ELECTRIC COMPANY)

Between August 2009 and September 2011, three investor-owned utilities (Atlantic City Electric, Jersey Central Power & Light and Rockland Electric Company) in New Jersey operated eight auctions for 10-year SREC contracts. Like the Delaware SREC Pilot, system owners were paid as-bid contract prices. The utilities auction results for the final, September 2011, auction are listed in Table 26 below. As mentioned previously, the tier sizes for this procurement program mirror the procurement tiers from the SREC Pilot.

³⁴ In an effort to increase the likelihood that awarded projects are completed, the Delaware SREC Pilot included a \$100/kW bid deposit. State policymakers may wish to evaluate the effectiveness of the bid deposit mechanism once after the 12-month installation window has concluded.

Table 26. September 2011 New Jersey Utility SREC Procurement Results (New Jersey BPU, 2011)

Market Segment	Price Type	SREC Contract Equivalent Price
Small (0-50 kW)	Average Price	\$232.98
Small (0-50 kW)	Low Price	\$115.91
Medium (50-500 kW)	Average Price	\$221.18
Medium (50-500 kW)	Low Price	\$146.89
Large (500-2,000 kW)	Average Price	\$214.92
Large (500-2,000 kW)	Low Price	\$174.87

As the table shows, prices under this solicitation varied widely, with low bids in some size classes at half the price of the average bid in the same tier. It is also important to note that average prices for each of the tiers were in the same range, with the average SREC price for the small tier only \$18.06 per SREC more than average prices in the largest tier.

2.4.2. NEW JERSEY (PSE&G)

Between December 2009 and the end of 2011 PSE&G operated a unique long-term solar loan program that allowed system owners to repay utility-provided loans through long-term SREC contracts. Under the program, homeowner or businesses could receive a loan from PSE&G for up to 60 percent of the installed cost of a PV system. System owners repaid their loans by transferring SRECs to PSE&G at a fixed rate. Repayment contract rates were fixed at 15-years, effectively providing system owners with a 15-year guaranteed SREC offtake agreement. Table 27 provides the fixed price loan repayment terms for the program.

Table 27. SREC Rates for PSE&G Solar Loan Programs (PSE&G, 2011)

Segment	Dec 2009-Jun 2010	Jul 2010-Dec 2010	Jan 2011-Jun 2011	Jul 2011-Dec 2011
Residential	\$450	\$435	\$420	\$400
Small Non-Residential (up to 150 kW DC)	\$410	\$395	\$380	\$360
Large Non-Residential (>150 - 500 KWDC)	\$380	\$365	\$350	\$330

As the table indicates, long-term SREC prices in this program were notably higher than any of the SREC prices from the Delaware SREC Pilot.

2.4.3. RHODE ISLAND

In the fall of 2011, the Rhode Island Office of Energy Resources used a stakeholder-based rate setting process to establish administratively set-contract prices for a range of PV system sizes. Contracts awarded under this program are for a fixed rate and 15-year term. Table 284 lists contract "Ceiling Prices" for the three system class sizes in the program. Projects 500kW and smaller are awarded contracts at the "Ceiling Price" listed below on a first-come first-served basis. Large systems are awarded contracts based on a competitive auction (though no contracts are awarded to projects exceeding the \$289.50 ceiling price). National Grid, the largest utility in Rhode Island has conducted two solicitations using these prices.

Table 28. Rhode Island Distributed Generation Standard Offer Contract Prices (National Grid, 2012)

System Size	Ceiling Price (\$/MWh)
Small PV (10-150 kW)	\$333.50
Medium PV (151-500kW)	\$316.00
Large PV (501-5,000kW)	\$289.50

2.4.4. PENNSYLVANIA UTILITY LONG-TERM CONTRACT SOLICITATIONS

Pennsylvania utilities have been granted the authority to procure SRECs through long-term contract solicitations. Table 29 below reports contract rates, volumes and terms for several of these solicitations.

Table 29. Pennsylvania Utility Long-term Contract Solicitation Results (FlettExchange, 2010; FlettExchange, 2011; PPL, 2011a; PPL, 2011b)

Utility	Date	Contract Term	Contract Volume	Price
PECO	March 2010	10 Years	80,000	\$265.57
Penn Power	March 2011	9 Years	2,200	\$199.09
PPL Electric Utilities	June 2011	8.5 Years	25,500	\$149.00
PPL Electric Utilities	August 2011	8 Years	24,000	\$107.83

Given publicly available data, the scale of PV projects under these solicitations is unclear. SRECs procured through this utility long-term contracting mechanism may be from large, utility-scale installations making comparison with Delaware pilot program prices imperfect at best.

2.4.5. CONCLUSIONS

As the previous section has indicated, SREC prices for both the competitive price auction and the administratively-set pricing in the SREC Pilot are either near or below prices for similar programs in the Northeast. It should be noted that each of these programs has unique features that make direct comparison with the SREC Pilot challenging. However, this data can confirm that the results of the Delaware program are within the pricing bounds found in other nearby states.

CHAPTER 3. EVALUATION AND ANALYSIS OF THE SUSTAINABLE ENERGY UTILITY (SEU)

This chapter evaluates the performance of the SEU as the SREC Pilot administrator. The first section of provides a summary of the feedback received from a survey of SREC Pilot applicants regarding the administration of the program. The second section of the chapter provides an analysis of the program structure and administrative costs, comparing it to similar solicitations in New Jersey, Rhode Island, and Connecticut.

3.1. APPLICANT FEEDBACK ON THE SEU'S PERFORMANCE

A web-base survey was sent to the 446 applicants and owner-representatives who took part in the SREC Pilot solicitation. The survey assessed the SEU and their contractor's (SRETrade) performance in administering the program. The survey was designed to answer the questions posed by Staff and the RETF as presented on page 33 of the PSC's pilot program staff report (DPL, 2011).

A total of 123 respondents completed the survey during the two-week open period. These included both system owners and owners representatives. At least 50.5 percent³⁵ of the total projects applying for the program were represented in the survey. While the survey was not designed to account for all potential sampling biases, this response rate is sufficiently large to provide insight into the applicants' experience with program. This section will summarize the results of the survey and provide key metrics to understand the feedback from the respondents. The entire survey questions and results are available in the Appendix.

3.1.1. OVERVIEW OF SURVEY RESPONDENTS

Out of the 123 respondents that completed the survey, 95 of these respondents were single system owners and 28 were owner representatives. The following sections profile each of these respondent classes.

3.1.1.1. SINGLE SYSTEM OWNERS

System owner response rates closely match the actual results of the solicitation. Table 30 below shows the breakdown of applicants between tiers compared to the solicitation results. As the figure shows, the survey was able to capture opinions from each of the tiers, with respondents completing the survey roughly in proportion to the actual solicitation results.

Table 30: System Owners: What Tier Did You Apply For?

	Respondents	Actual Solicitation (All Applicants)
Tier 1	86.2 %	88.5%
Tier 2A	9.8 %	7.7 %
Tier 2B	1.6 %	2.6 %
Tier 3	2.4 %	1.3 %

Seventy-five percent of respondent projects were existing systems at the time of the solicitation, as seen in Figure 7 below. Additionally, over two-thirds of the respondents were not awarded a contract.

³⁵ The representation may actually be higher than 50.5%. Six Owner Representatives responded to the survey indicating they represented "more than 20" systems. These Owner Representatives were assumed to represent 21 systems each.

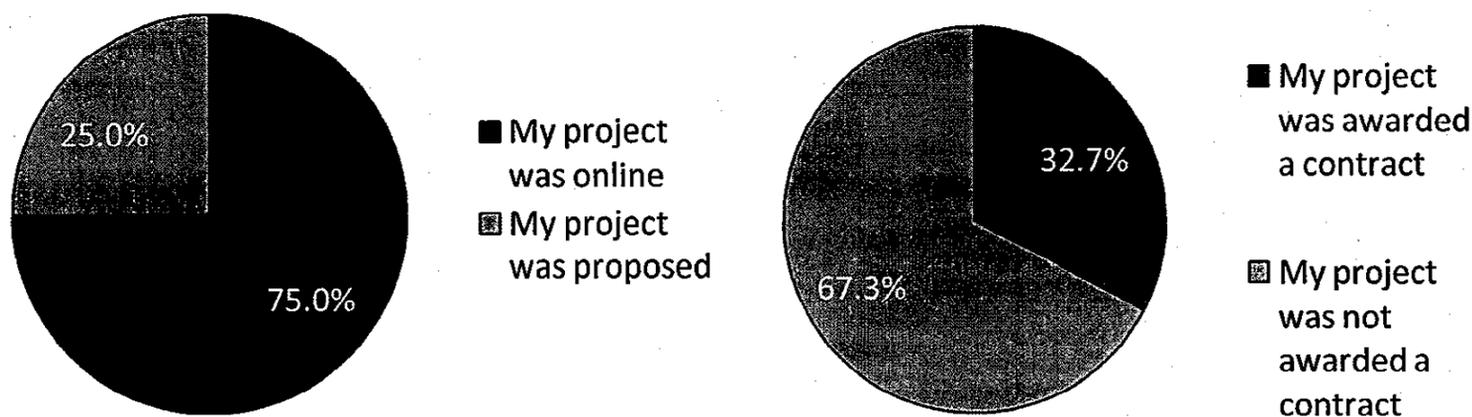


Figure 7. Was your project online at the time you submitted your application? Was your project awarded a contract under the SREC pilot?

3.1.1.2. OWNER REPRESENTATIVES

Similar to the respondents with a single system, a majority of the projects represented by Owner Representatives were applying for Tier 1.

Table 31: Owners Representatives: What Tier Did You Apply For?

	Respondents	Actual Solicitation (All Applicants)
Tier 1	82% ³⁶	88.5%
Tier 2a	12%	7.7 %
Tier 2b	5%	2.6 %
Tier 3	1%	1.3 %

Like the single system owner respondents, a majority of the respondents who were Owner Representatives applied with projects that were already online. The data collected in this survey was not granular enough to determine exactly how many projects were awarded contracts from the Owner Representative respondents who completed the survey.

3.1.2. SURVEY RESULTS

The survey was designed to seek input on several key program areas:

- Equipment and workforce bonuses,
- Effectiveness of marketing and messaging around the solicitation,
- Preference of the respondents on whether Tier 1 and Tier 2A pricing should be set through a price auction,
- Question and answer process, and
- Respondent's overall satisfaction with the administration of the program.

Each of these topics is discussed below. A full list of the questions asked is available in Appendix A of this report.

³⁶ This percentage may be higher, as there were six instances where the applicant responded with "more than 20 projects". These Owner Representatives were assumed to represent 20 systems each.

3.1.2.1. THE IN-STATE EQUIPMENT AND WORKFORCE BONUSES

As discussed in Chapter 1, all of the Tier 1 and Tier 2A projects that were awarded a contract through the SREC Pilot qualified or stated they would qualify for the Delaware equipment and workforce bonuses as did a majority of the projects awarded a contract through Tier 2B and Tier 3. Given the preferential treatment that these bonuses provided applicants in the lottery, questions were posed in order to better understand why the applicants, who did not apply for the bonuses, chose not to do so.

Many of the 93 respondents that did not qualify for one or more of the bonuses provided reasoning as to why their project did not qualify. Table 32 below shows the responses from those that did provide an answer to this question.

Table 32. If The Project Was Not Eligible For The Delaware Workforce and/or Equipment Bonus, Why Not?

Answer Options	Responses
Bonus was not financially sufficient to offset cost increase	9
Equipment/workforce did not meet technical requirements for projects	8
Equipment/workforce was not available	15
Other	30

A number of survey respondents provided direct feedback as they did not feel that the provided multiple choice answer options sufficiently answered this question. Below are some representative comments³⁷:

“Didn't know it would matter at the time the project was designed.”

“At time of construction, we were not aware of the equipment bonus. Had we known we would've used both Delaware labor & equipment.”

“Unaware of product made in Delaware”

“I chose DE workforce but not DE equipment. At the time I was told I would get a 10% bonus on my RECs but no one could explain how I would get the extra money or who would pay the extra 10% in the open REC market. Since the panels were on the front of my house, I chose all black panels instead of the DE blue/silver panels that would not have looked as good in the neighborhood.”

“My project was too small.”

“I never saw the requirements. The installer was from MD, but the galvanized tubing, and concrete to put up the ground mount racking system was all purchased in Delaware.”

These and other comments provided by the respondents indicate that there was confusion around the availability of the bonuses, their purpose, and how to qualify for them. Additionally, many respondents felt that these criteria prevented their existing systems from receiving fair consideration in the lottery, particularly as the lottery rules were not understood when they were making decisions regarding panel options.

³⁷ Note: In the interest of clarity, spelling and punctuation have been edited for some responses. The content of each response has not been changed.

3.1.2.2. EFFECTIVENESS OF MARKETING

Respondents were asked to indicate how they learned about the solicitation. The results of the survey showed that almost 60 percent of the respondents learned about the solicitation through their installer. The results are displayed in Table 33 below.

Table 33. How did you learn about The SREC Pilot program solicitation?

Answer Options	Response Percent
Solar Installer	58.1%
Owner Representative	16.9%
SRECDelaware.com	12.9%
SRECTrade	12.9%
Delaware Public Service Commission (DE PSC)	8.1%
Division of Energy and Climate (Delaware Energy Office)	6.5%
Friend/Colleague	4.8%
Delaware Sustainable Energy Utility	4.8%
Newspaper or Magazine	1.6%
Online Social Network	0.8%
Online Blog	0.0%
Delmarva	0.0%

In regards to a separate but related question, almost 60 percent of the respondents believe that SEU and SRECTrade did an adequate job of notifying them about the solicitation. Figure 8 below provides the responses to this question.

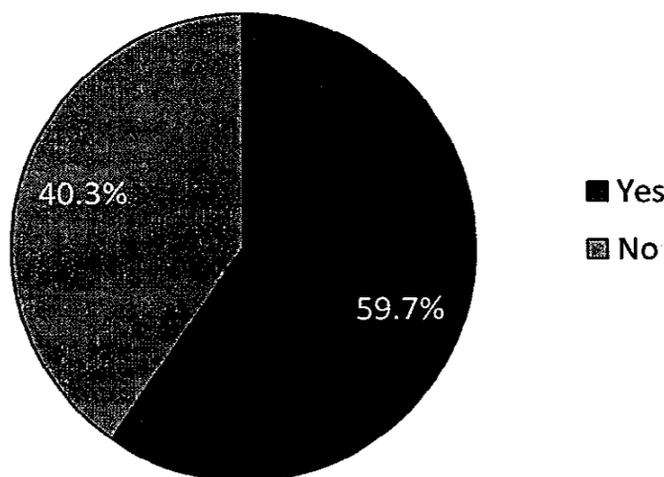


Figure 8. Do you think SRECTrade/Sustainable Energy Utility (SEU) did an adequate job of notifying the solar community about the solicitation?

Respondents were asked to provide suggestions as to how SRECTrade/SEU could better notify the solar community for future solicitations. Some of these responses included:

"Ads in the paper, billboards, and TV spots"

"Learned about it only days before auction. Advertise or put in paper. It was not in the paper until one week before closing."

"I personally know of at least 2 other people who are interested installing solar and I informed them of it. It needs more radio and maybe TV and newspaper spreads."

"We received nothing from the SREC Trade/SEU. Anything would have been helpful."

"The SEU should have used the GEP refund account information to establish a communications list."

"There are a lot of people who still do not even know about the solicitation or they did not really understand it. The state knows everyone's names and contact information, why weren't they notified and properly informed."

These responses indicate that some survey respondents felt that the program coordinators could have more actively advertised the solicitation or could have directly reached out to system owners in the state.

3.1.2.3. PREFERENCE FOR A COMPETITIVE BID PROCESS FOR TIER 1 AND TIER 2A

When asked whether a pay-as-bid price auction for Tier 1 and Tier 2A would be preferred over administratively-set prices in future solicitations, over 70 percent of the respondents said they would rather continue with administratively-set pricing. This response is not surprising as the analysis of the rates set for the lower tiers discussed in Chapter 2 suggests that on average system owners were receiving higher SREC prices than what was necessary to make the projects financially feasible.

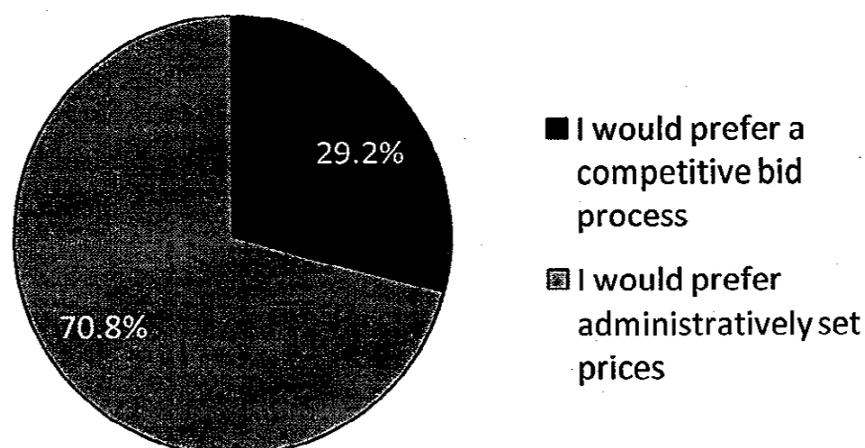


Figure 9. Would you prefer a competitive process or administratively set prices?

3.1.2.4. PERCEIVED RISK ASSOCIATED WITH CONTRACTING THROUGH THE SEU

During the program development process, some stakeholders expressed concerns that system owners and financiers may perceive an added risk when contracting with the SEU instead of contracting directly with Delmarva. When asked whether there was any additional perceived risk with signing contracts through the SEU, an overwhelming majority of respondents said they did not perceive any risk.

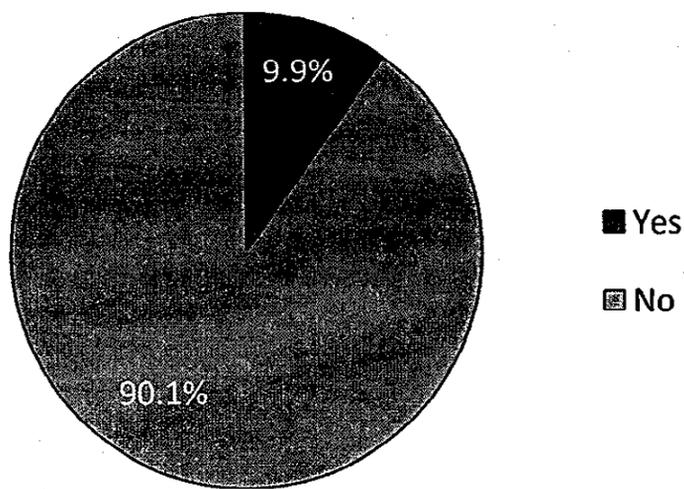


Figure 10. Did you perceive any additional risk associated with contracting through the Sustainable Energy Utility instead of directly through Delmarva?

3.1.2.5. QUESTION AND ANSWER PROCESS

Respondents were asked to rate their experience with the following attributes of the SRECTrade-administered question and answer process:

- Length of question and answer period,
- Timeliness of response,
- Quality of response, and
- Overall satisfaction with the Q&A process.

Figure 11 below shows the responses to these questions. Overall, there was limited dissatisfaction with the question and answer process, with almost 70 percent of respondents indicating that they were very satisfied, satisfied, or neutral about their experience on all of the survey questions.

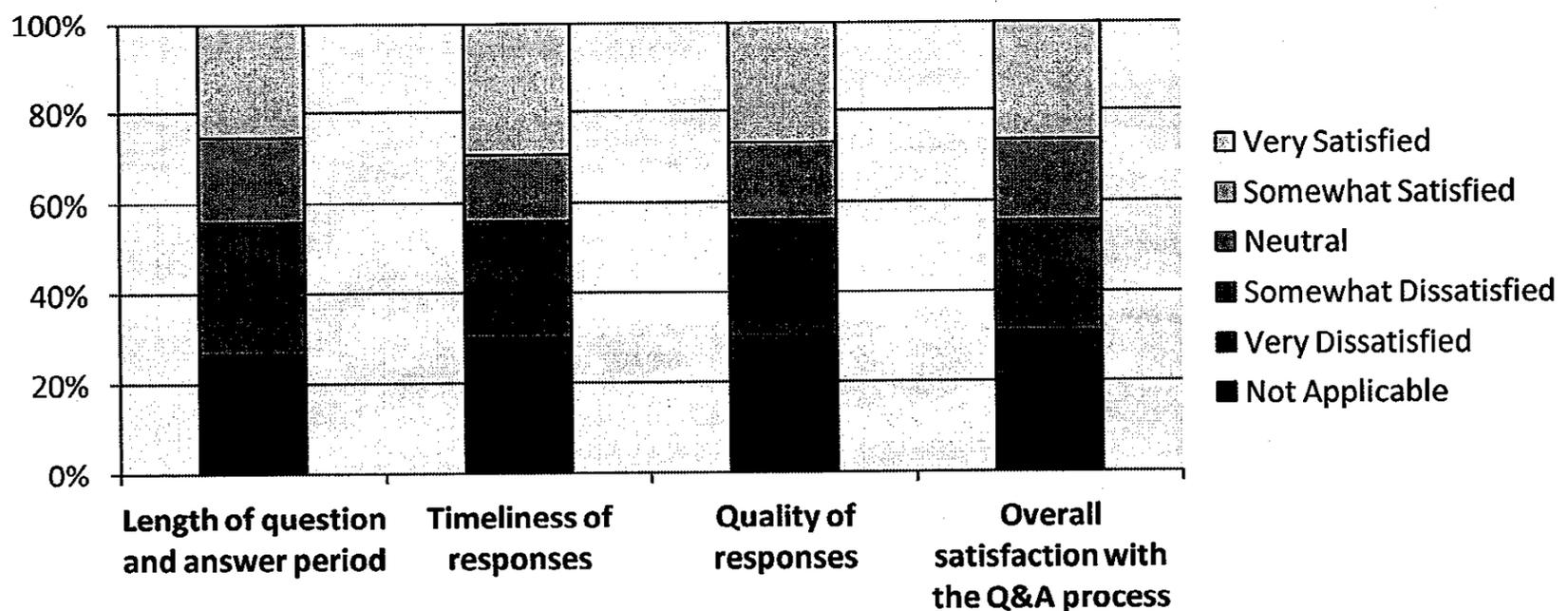


Figure 11. Please rate your experience with the following attributes of the question and answer process.

3.1.2.6. OVERALL SATISFACTION

Respondents were also asked to rate their experience with the following attributes of the solicitation administration:

- Solicitation timeline,
- Clarity of eligibility criteria,
- Fairness of eligibility criteria,
- Ease of filing application,
- Quality of online systems, and
- Terms of SREC transfer agreement.

Figure 12 below provides respondent opinions on each of these program aspects. For most of the questions pertaining to administrative logistics, such as the ease of filing an application and quality of online systems, a majority of respondents were satisfied or neutral. Most of the dissatisfaction focused on the clarity and fairness of the eligibility criteria, with 35 percent of respondents dissatisfied with the clarity of the eligibility criteria and 48 percent of respondents dissatisfied with the fairness of the eligibility criteria.

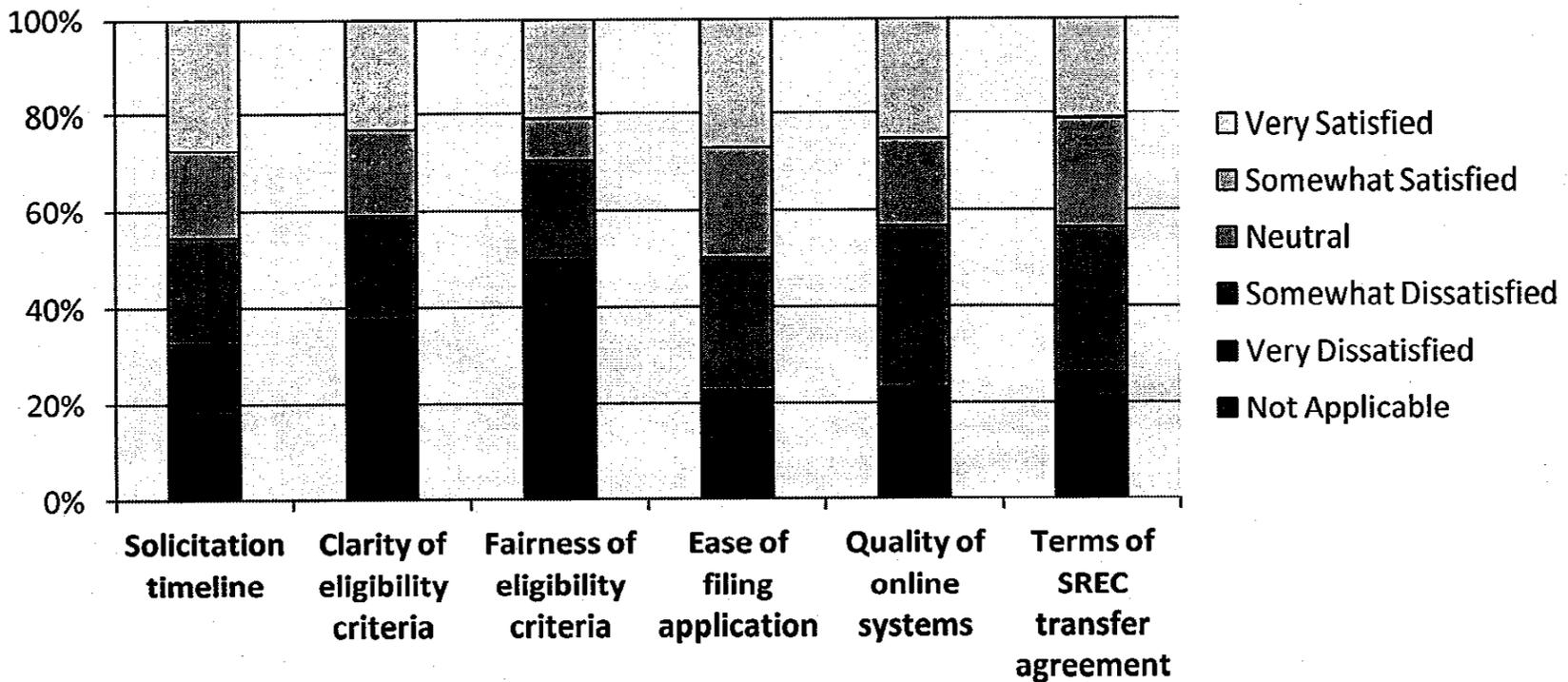


Figure 12. Please rate your experience on the following attributes of the solicitation administration

In the next question, respondents were asked to submit feedback on whether they believed the program was fairly and effectively administered. Responses to this question were evenly split, with 51.2 percent of respondents saying that they do not believe the program was fairly and effectively administered. Figure 13 below shows the breakdown for this question.

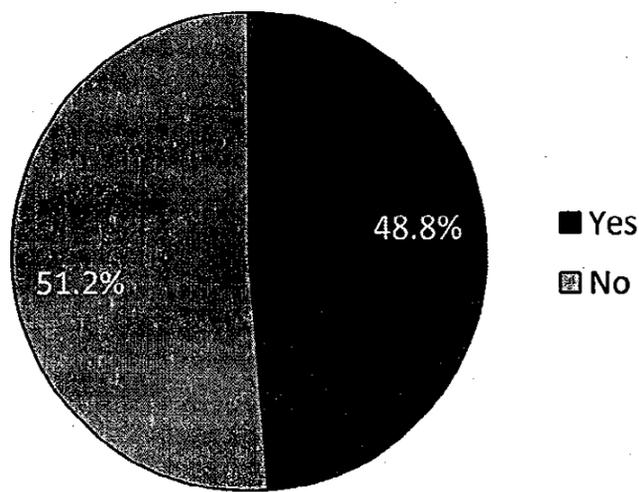


Figure 13. Overall, do you think the program was fairly and effectively administered?

As might be expected, respondents were more likely to respond that the program was not fairly or effectively administered if they were not awarded a contract under the program. Figure 14 below shows the respondent breakdown to this question based on whether they were awarded a contract.

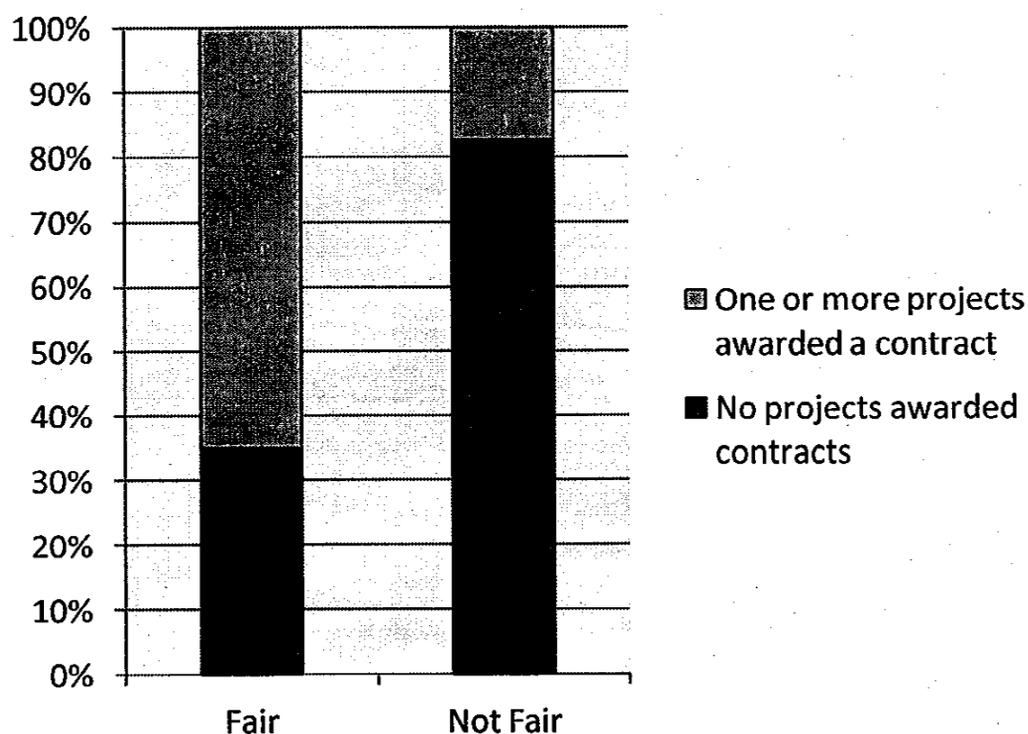


Figure 14. Respondent's evaluation of the program based on whether they were accepted into the program

Respondents who were not satisfied with the program were given the opportunity to provide comments. These comments had several common themes, which are summarized below:

Frustration that only projects that qualified for the Delaware bonuses were accepted into the program: The most common feedback focused on the priority given to projects that used in-state equipment and labor. Selected comments include:

"I do not feel the award process was fair because those who purchased equipment made in Delaware moved ahead of those who did not. My Delaware installers had no panels to offer me to buy. If they had I would considered their purchase. In fact, I would like to know what Delaware produced equipment qualified. I am not aware of any solar power equipment made in DE."

"... Just do a first come, first serve basis. No solar panels or equipment are built in the US anymore, but all the people doing the work in DE still contribute to the local economy. And if you did not make the last cut, you should be guaranteed to make the next cut before any new systems are created unless there is no room in the next cut. If I keep getting pushed back, I am removing my panels and taking them to the DEU and dropping them off."

"There should not be a preference for the equipment bonus."

"Eliminate the prejudicial first consideration of Delaware materials and labor."

One commenter did offer the opinion that giving priority to in-state equipment and labor was a positive component of the program:

"[S]olar installations using DE based workforce & materials should be included in the SREC program before others, since this is using DE tax revenues, etc. It is a good program."

The belief that existing systems should be given priority: A number of respondents expressed discontent that the program placed existing systems and under development/proposed systems in the same pool, or that under development/proposed systems were considered at all. Select comments include:

"On line systems should only be qualified NOT proposed systems"

"SRECs should have been available to all online projects and not offline projects"

"Older, smaller, and operational systems should have priority in the selection process. Without a viable SREC market, I, as the owner of a 9[k]W single system, face a real financial hardship if I can't get a reasonable return on my SRECs. You need to be able to satisfy more small systems with this type of program..."

"I am extremely disappointed with the Delaware SREC program, having been totally left out. I find [the] State program could certainly have been more fair in the allocation especially to those who have already invested in Solar Power rather than those who don't even have a system running. Poorly executed and totally unfair."

"... allowing a system that is not 100% connected and online to get contracted is a major flaw. If they fail to get connected, those SRECS are lost. Would you leave the barber shop with only a half finished haircut?"

Confusion around how this project relates to the overall SREC program. There were a few comments that suggested that the respondent did not understand how the SREC Pilot related to the overall SREC market:

"We feel in the dark about what has happened with this program. We were told we would be in the first group that went into the program and then politics got in the way and we still are not in the program when we were online as of December 2010. We don't feel that we've had adequate education about the program and this survey was answered by guessing as we don't really understand what the questions are all about. The first question on the size of our project was the only question that we can answer adequately. How about putting the folks that have the connections aside and deal with those of us who have been online and should be in the program."

"Take care of those that have spent the money first not those just thinking about it. You put out a rate per SREC and the builder used that for guarantees and we based a \$35,000 decision on it ... Some heads are going to roll."

"Novice system owners like myself have a hard time understanding how the entire SREC system works. All of the info needs to be broken down into simple terms for people who are novices to the solar industry. Put in steps what new owners need to do in the order they need to do them after having their system installed."

"Give more information re: the % of people who could be awarded a contract .. We are very upset over this whole process so far. We have just this month be on line of 1 year ... we would like to get something for our 10+ RECs!"

"I have received federal and state credits, but I still do not have SEU explanation of why I cannot yet get into the program. You have my email address as an owner, so send me information, Please."

"Never received any notice until this second survey. Have been waiting since Feb.2011 to receive a payment. We were told initially that we would be paid quarterly. To date nothing."

"SEU assisted the installers in marketing the solar systems and we the consumer purchased with the understanding that SREC's were going to assist us in getting some of our money back. So far I haven't received a single SREC penny. You should be reported to a consumer fraud agency. It is a disgrace that we were told if we bought the solar panels we could be reimbursed in a suggested amount of time. Some solicitations should be made available to us. We are definitely saving somebody some money; we are producing electricity and not getting paid for it."

The necessity of Owner Representatives: A few single system owners commented on their inability to represent themselves in the process:

"... Also the requirement to have two systems in order to represent yourself is unfair. I'm fully able to transfer my SRECs from GATs to a broker for sale. Why do I need an aggregator in the middle ..."

"Require individual participation and communication instead of representative system."

"... Very disappointed that home owners could not directly apply, but had to work through representatives. They delayed / confused the application process and inappropriately used their "middle man" roles to establish far reaching contractual agreements, which was not necessarily our goal / intent. This was totally unnecessary."

It is important to note that 84 percent of respondents did express that they were satisfied or held a neutral position on their experience with their Owner Representative, as seen in Figure 15 below.

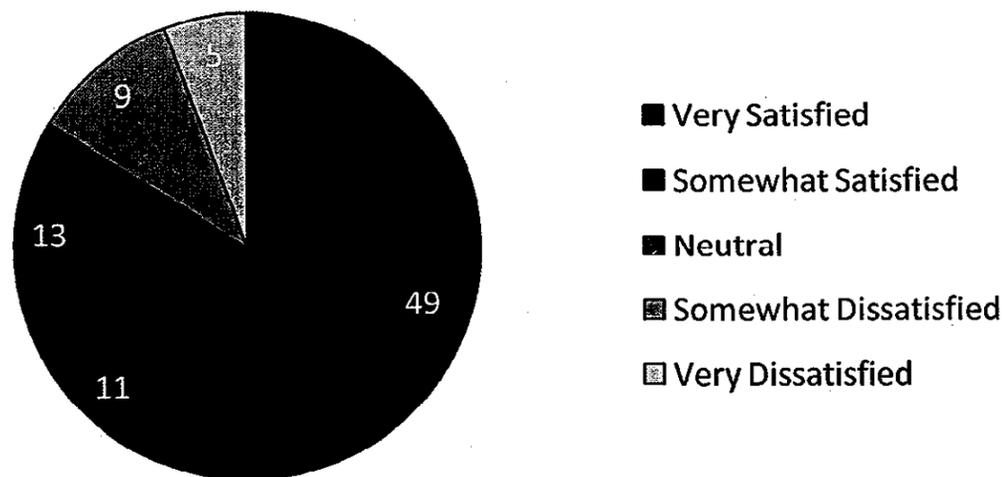


Figure 15. Overall, how satisfied were you with your Owner Representative?

3.2. COMPARISON OF ADMINISTRATIVE STRUCTURE TO OTHER PROGRAMS

The Sustainable Energy Utility (SEU), a non-profit organization tasked with managing the state's energy efficiency and renewable energy services, was selected to manage the solicitation process for the SREC Pilot and be the SREC contracting party. With the program originally conceived to include three utilities (Delmarva Power & Light Company, the Delaware Municipal Electric Corporation, and the Delaware Electric Cooperative), having a single entity to contract SRECs through was expected to potentially save on administrative costs and increase the program efficiency. The SREC Pilot ultimately only included Delmarva, raising questions about the necessity of utilizing the SEU as the solicitation administrator instead of Delmarva Power directly administering the program. This section will explore this question by assessing Delmarva's rationale behind moving forward with the SEU as the solicitation administrator and comparing this strategy to similar programs in New Jersey, Rhode Island, and Connecticut. Additionally, the analysis will assess whether utilizing the SEU had a significant impact on the administrative costs of the program. In Order No. 8093, Delmarva was told that when it seeks recovery of Pilot Program costs, it will be required to establish that using the SEU was no more expensive than if Delmarva had performed the administrative duties itself.

3.2.1. OVERVIEW OF DELMARVA SREC SOLICITATION DESIGN

3.2.1.1. ADMINISTRATIVE STRUCTURE

Delmarva adopted a unique administrative structure when they selected the SEU as the SREC contracting party and program administrator. The SEU subsequently subcontracted most of the administrative tasks to SRECTrade, who set up the front end systems through which system owners and owner representatives were able to enter the lottery and/or competitive bid process. This administrative structure is shown in Figure 16 below.

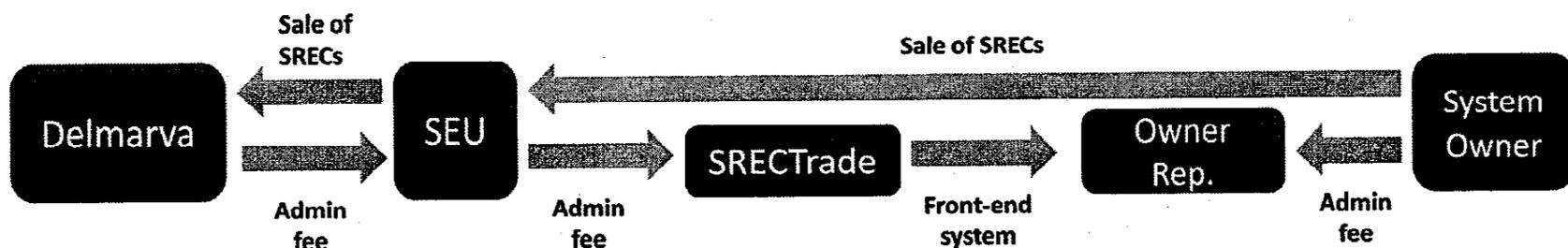


Figure 16: Administrative Structure of the SREC Pilot

3.2.1.2. ADMINISTRATIVE COSTS

The administrative costs associated with the SREC Pilot are listed in Table 34 below.

Table 34: Delaware Pilot Program Administrative Costs

SEU	
Setup Fee	\$ 61,495 ³⁸
Annual Fee	\$ 71,402 ³⁹
SRECTrade	
Platform	\$ 45,000 ⁴⁰
Auction	\$ 43,682 ⁴¹
Monthly Fee	\$ 11,000 ⁴²
Estimated Year 1 Cost	\$ 320,579⁴³
Year 2 to Year 20 Total Cost	\$ 3,864,638

3.2.1.3. DELMARVA'S RATIONALE FOR UTILIZING THE SEU

In Delmarva's pilot filing before the PSC, the company outlined the key reasons why it decided to move forward with the SEU as the program administrator (DPL, 2011). These included:

Administrative Costs: The program may expand to include additional utilities moving forward, including the Delaware Municipal Electric Corporation and the Delaware Electric Cooperative. If this happens, utilizing the SEU to administer the program and contract the SRECs with system owners would be more cost effective than having each utility administer the program separately.

Experience: The SEU has prior experience with SREC contracting. The Dover SUN Park, a 10 MW solar facility on 103 acres in the City of Dover, for which Delmarva contracted with the SEU to bank the SRECs from the project so as to not flood the market and cause a collapse in SREC prices (LS Power, 2010).

Administrative Burden: With the SEU as the program administrator, Delmarva would not have the administrative burden of managing individual contracts.

Banking Rights: While Delmarva is only allowed to bank SRECs for up to three years, the SEU can bank SRECs indefinitely. Similar to the situation with the Dover SUN park, having the ability to bank SRECs provides flexibility in deciding when Delmarva wants to retire them (DPL, 2011).

In an initial study of Delmarva's application, New Energy Opportunities, Inc. and La Capra Associates, Inc. question the relevance of these arguments given the state of the SREC Pilot. The authors point out that Delmarva already has experience with managing solicitations and contracting SRECs. Additionally, they note

³⁸ One time cost

³⁹ Estimated based of the \$6.224/SREC fee and assuming 11,472 SRECs procured through the SREC Pilot.

⁴⁰ One time cost

⁴¹ One-time cost

⁴² This monthly cost applies only to the contracts under this solicitation. Future solicitations through SRECTrade would likely have additional monthly fees.

⁴³ Formula used: SEU Setup Fee + Annual Fee + SRECTrade Platform Fee + Auction Fee + (Monthly Fee x 9 months)

that the SEU does not have much of the infrastructure, such as in-house accounting systems, that Delmarva already has in place, potentially adding to the cost and complexity of the program. Finally, they questioned the need to utilize the banking rights of the SEU based on the estimated SREC purchase requirements and expected purchases through the program (New Energy Opportunities, Inc., 2011b). These questions are still relevant going forward.

Whether or not the experience, administrative burden, and banking rights are sufficient reasons to utilize the SEU in this role, the decision to continue with this structure for future procurements is likely to be primarily driven by whether additional costs were incurred as compared to a more traditional procurement structures. The next section will explore how other states have designed their renewable energy procurement programs and how the administrative costs of these programs compare to the costs of running the Delaware pilot program.

3.2.2. COMPARISON TO OTHER STATE-LEVEL PROGRAMS

3.2.2.1. ADMINISTRATIVE STRUCTURE

The administrative structure of SREC procurement programs in New Jersey, Rhode Island, and Connecticut were reviewed as part of this study. The following sections provide details on each of these program structures.

3.2.2.1.1. NEW JERSEY'S LONG-TERM CONTRACTING PROGRAM

In August 2008, the New Jersey Board of Public Utilities issued an order requiring three investor-owned electric distribution companies (EDC) to offer SREC purchase contracts for 10-15 year terms to system owners. Starting in August 2009, the three EDCs, Atlantic City Electric (ACE), Jersey Central Power and Light (JCP&L), and Rockland Electric Company (RE), began soliciting long-term SREC contracts through a competitive process. During the period this program was active, solicitations occurred three times per year and were subject to a number of restrictions (DSIRE, 2012):

- Projects had to be 2 MW or smaller;
- Both residential and commercial projects were eligible;
- Projects that received rebates through the Customer On-site Renewable Energy (CORE) program were not eligible for the solicitations;
- Existing projects were not eligible; and
- Output needed to be measured with a utility-grade generation meter.

New Jersey's Renewable Portfolio Standard (RPS) differs in that the requirements dictating the purchase of renewable energy falls on the suppliers, not the EDCs. The EDCs hold quarterly auctions to sell the SRECs they purchase through the long term contracts to load serving entities active in the state.

Even with the regulatory differences, the New Jersey solicitations are similar in scope with the Delaware program. To administer the program, the three utilities coordinate their efforts through the same SREC-based financing program. Rather than using an entity like the SEU to act as the contracting party, however, these three utilities have chosen to execute contracts individually. NERA Economic Consulting, a private consulting firm, has been retained by all three organizations to manage the solicitation and perform a similar role as SRECTrade did in the Delaware pilot. NERA does not provide contracting services, as the SEU does as part of the Delaware pilot. Figure 17 below outlines the structure of the New Jersey utility program.

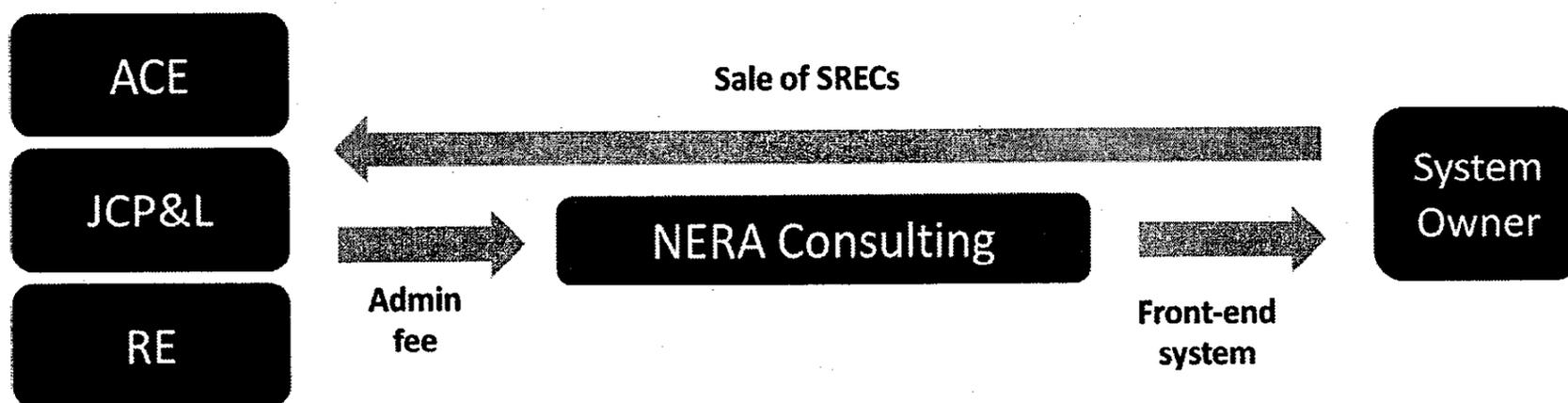


Figure 17: NJ Solicitation Administrative Structure

3.2.2.1.2. RHODE ISLAND'S STANDARD OFFER DISTRIBUTED GENERATION PROGRAM

In June 2011, Rhode Island established a feed-in-tariff program to procure long term contracts for 5 MW in aggregate capacity from solar PV or wind technologies by the end of the year and set a timetable to procure up to 40 MW in aggregate capacity by the end of 2014. These standard contracts set a predetermined rate for the electricity and RECs based on the system size with a 15-year term.

National Grid, which is the only investor-owned utility (IOU) in Rhode Island and serves 99 percent of the state’s mainland customers, is mandated by law to fulfill annual minimum capacity targets (DSIRE, 2011). Like New Jersey, National Grid contracts with the system owner directly. Unlike New Jersey, however, National Grid is also directly managing the solicitation.

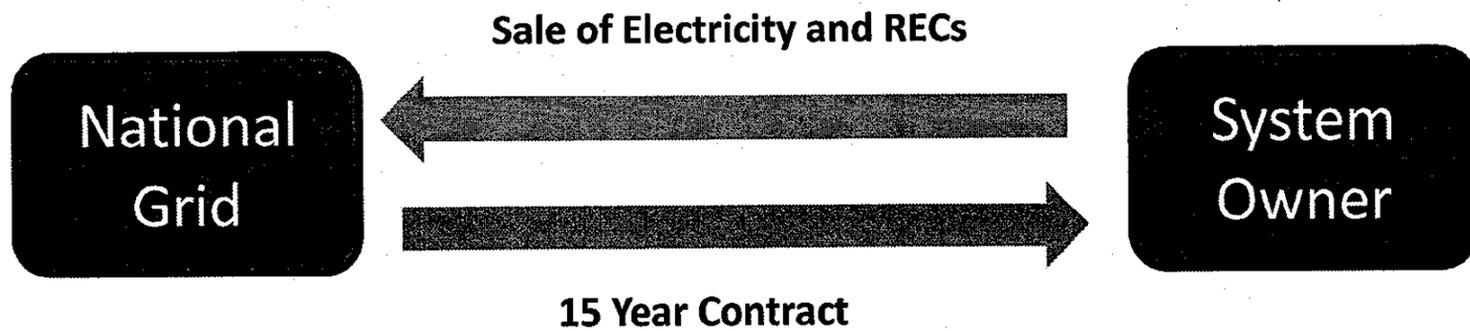


Figure 18: Rhode Island Standard Offer Administrative Structure

3.2.2.1.3. CONNECTICUT’S ZREC PROGRAM

A Connecticut law enacted in 2011 created a new RPS requirement for the state’s two IOUs – United Illuminating (UI) and Connecticut Light and Power (CL&P) – to solicit long term contracts for renewable energy credits from “zero emission” generation facilities (ZRECs). These zero emission facilities include solar, wind, and hydro generators.

In December 2011, UI and CL&P jointly released a solicitation plan outlining the program procurement methodology and administrative structure. The utilities will solicit ZREC contracts valued at \$120 million per year for six years. The ZRECs are split into three size classes:

- Projects up to 100 kW – Small ZRECs
- Projects between 100 kW and 250 kW – Medium ZRECs
- Projects between 250 kW and 1 MW – Large ZRECs

The utilities plan to jointly offer a single RFP to competitively solicit Medium and Large ZRECs. Small ZRECs will be administered through a tariff rider, which will be valued as the average of the awarded bids for Medium ZREC projects plus 10 percent, subject to a price cap of \$350. Eighty percent of the procurement will be allocated to CL&P, with the remaining 20 percent going to UI. The utilities will jointly manage the solicitation, and will directly contract with the system owners (CL&P, 2011).

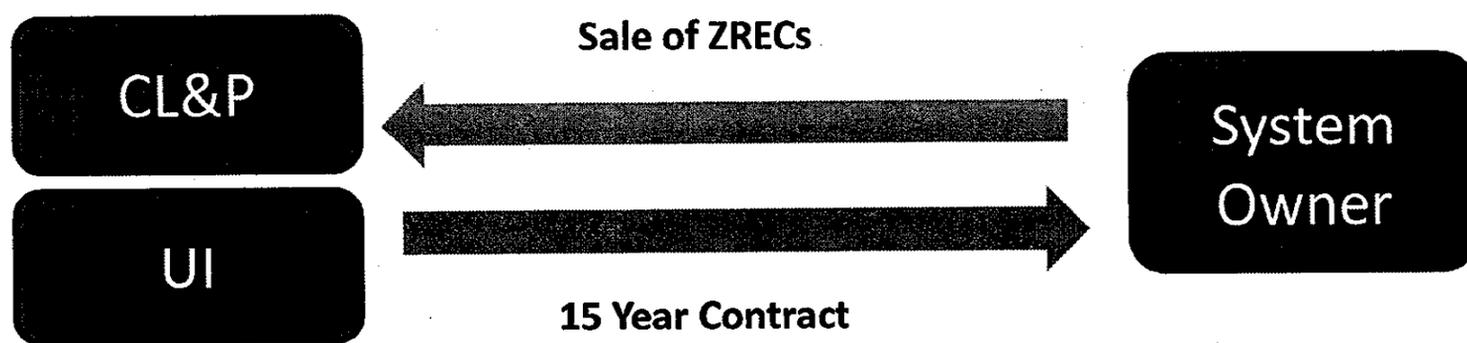


Figure 19: Connecticut Long Term ZREC Procurement Administrative Structure

3.2.2.2. ADMINISTRATIVE COSTS

In order to better understand whether the SEU’s role had a significant impact on overall program costs, the following section will benchmark the known administrative cost of the solicitation against other similar programs. Little publicly available data exists for auction implementation costs, and the data that is available is

frequently not granular enough to draw a direct comparison. Therefore, this section is intended to provide an "order of magnitude" level comparison of the pilot's administrative costs compared to other programs.

3.2.2.2.1. COMPARISON WITH NEW JERSEY'S LONG TERM CONTRACTING PROGRAM

Administrative costs associated with the Delaware pilot include costs for both the initial SREC solicitation and for ongoing SREC contract management services. Table 35. Pilot Procurement Costs breaks down these costs showing the costs associated with the conducting the initial auction as well as the annualized costs Delmarva will pay both SREC Trade and the SEU for ongoing contract management services. The following sections will examine these administrative costs types separately.

Table 35. Pilot Procurement Costs

Cost Type	Cost Line	Pilot Cost
Solicitation Cost	SEU Setup Fee	\$61,495
Solicitation Cost	SREC Trade Platform Fee	\$45,000
Solicitation Cost	SREC Trade Auction Fee	\$43,682
Annual Costs	SEU Annual Fee	\$71,402
Annual Costs	SREC Trade Monthly Fee (Annualized)	\$132,000

3.2.2.2.1.1. Direct Solicitation Costs

Of the four state programs assessed for this report, only New Jersey's long term contracting program had readily available administrative costs information related to solicitation costs. In May 2012, the Center for Energy, Economic and Environmental Policy (CEEPP) at Rutgers University released an analysis of the New Jersey program to determine net ratepayer cost exposure. Table 36, 37 and 38 below outline the administrative costs for each EDC published in the CEEPP report (CEEPP, 2012). These tables show the total costs each of the New Jersey EDCs paid to NERA for operating the SREC solicitation.

Table 36. ACE Administrative Costs

Energy Year	NERA Solicitation Manager Costs	Solicitation Costs per SREC	MW Contracted
2010	\$ 237,220	\$9.17	2.1
2011	\$ 164,680	\$1.60	8.4
2012	\$ 222,226	\$2.01	9.0
Total/Average	\$ 624,126	\$2.61	19.5

Table 37. JCP&L Administrative Costs

Energy Year	NERA Solicitation Manager Costs	Solicitation Costs per SREC	MW Contracted
2010	\$ 584,014	\$4.37	10.9
2011	\$ 542,345	\$2.73	16.2
2012	\$ 390,863	\$2.47	12.9
Total/Average	\$ 1,517,222	\$3.09	40.0

Table 38. RE Administrative Costs

Energy Year	NERA Solicitation Manager Costs	Solicitation Costs per SREC	MW Contracted
2010	\$ 47,642	\$42.77	0.1
2011	\$ 46,134	\$2.80	1.3
2012	\$ 35,078	\$1.16	2.2
Total/Average	\$ 128,854	\$2.70	3.6

As these tables note, the average solicitation costs per SREC ranged from \$2.61 for ACE to \$3.09 for JCP&L. A direct comparison between the solicitation administration costs on a per-SREC basis is not appropriate as the Delaware pilot procured 20-year SREC contracts while the New Jersey solicitations procured 10-year SREC contracts, however a comparison between the New Jersey solicitation and the total number of SRECs procured during the first ten years of the Delaware pilot solicitation is a useful benchmark. Table 39 below shows the solicitation average costs per SREC for the New Jersey solicitations and also shows the costs per SREC for the total number of SRECs procured under the first ten years of the Delaware pilot.⁴⁴ Administrative costs associated specifically with the Delaware solicitation include the SREC Trade setup fee and platform fee as well as the SEU setup fee but do not include ongoing contract management fees (see Table 35 above).

Table 39. Comparison of Solicitation Costs between New Jersey and Delaware

SREC Solicitation	Solicitation Cost per first 10 years of SRECs
ACE	\$2.61
JCP&L	\$3.09
RE	\$2.70
Delaware Pilot	\$1.31⁴⁵

As the table indicates, the direct solicitation costs of the Delaware SREC program compare favorably to the costs seen in New Jersey. This is notable particularly as this was the first solicitation of the pilot program and first-round solicitation costs for the New Jersey programs were significantly higher than the three-year average solicitations costs presented in this table.

3.2.2.2.1.2. Ongoing Contract Management Costs

As Table 35 indicates, the majority of the program administrative costs are associated with ongoing contract management fees for both the SEU and SREC Trade. According to Delmarva representatives, the work funded through these administrative fees significantly reduced the utility's in-house SREC contract management administrative burden. These fees also replace costs that SREC sellers would likely have incurred had they attempted to sell their credits on the open market. The costs reported as part of the New Jersey solicitations do not include ongoing contract management fees and therefore directly benchmarking these costs against a similar program is not possible. Table 40 below shows the expected cost of these fees during the first year of the program on a per-SREC basis.

⁴⁴ For consistency, this analysis did not assume any system production degradation over the course of the SREC contract life.

⁴⁵ Calculation: \$61,495 (SEU Setup Fee) + \$45,000 (SREC Trade Platform Fee) + \$43,682 (SREC Trade Auction Fee) / 114,723 (10-year pilot SREC volume) = \$1.31 / SREC

Table 40. Calculated SREC Management Fees

SEU Annual Fee	SREC Trade Monthly Fee (Annualized)	First-year SREC production	Estimated \$/SREC (A+B)/C
\$71,402	\$132,000	11,472	\$17.73

These fees substitute for range of services that both SREC sellers and buyers would typically incur in the open market and also displace costs Delmarva would incur managing SREC contracts. Total annual costs for these are estimated to be more than \$200,000 per year.⁴⁶ This equates to several full-time employees providing contract management services. Assuming these charges will continue for the 20-year life of the contract, it may be in the interest of ratepayers to either explore alternative strategies for ongoing contract management or to seek discounted contract management costs during future pilot program rounds.

⁴⁶ This is more than nine percent of total aggregated first-year SREC contract values. ($\$203,402/\$2,154,288 = 9.44\%$)

CHAPTER 4. BLOOM FUEL CELL IMPACTS ON SREC PURCHASE OBLIGATIONS

This chapter will briefly review the regulatory background of the Bloom fuel cell projects and provide context for their potential impacts on the Delaware SREC market. A high-level projection of the potential impact of SREC offsets from the Bloom projects is also provided from 2012 to the 2025 RPS compliance year.

4.1. BLOOM FUEL CELL PROJECTS REGULATORY BACKGROUND

In July 2011, Governor Markell signed into law Senate Bill No. 124, which was intended to encourage the development of Bloom Energy fuel cell projects in Delaware. This bill amended REPSA to allow Delmarva to reduce its REC and/or SREC obligations with energy delivered by a Qualified Fuel Cell Provider Projects if such projects were approved by the Commission. On October 18, 2011, the Commission approved Delmarva's proposed electric and natural gas tariffs allowing the utility to pass through costs and revenues associated with the output of a 30 MW Qualified Fuel Cell Provider Project proposed in association with a planned fuel cell manufacturing plant to be built by Bloom Energy Corporation (New Energy Opportunities, Inc., 2011b). Delmarva's approved tariff allows for a monthly customer surcharge over the next 21 years.

Under the original Senate Bill No. 124 language, Delmarva was permitted to reduce its RPS REC obligation by one REC for every MWh of energy produced under the Bloom fuel cell tariff. Alternatively, Delmarva could elect to offset one MWh of its SREC obligation for every six MWh of energy produced by the Bloom projects. Under the REPSA amendments, the Secretary of DNREC, in consultation with the Commission and Delmarva, was permitted to adjust these REC and SREC offsets allowance ratios in order to lower cost impacts of the Bloom Energy projects (Delaware State Senate, 2011). In his August 19, 2011 testimony to the Commission as part of Docket 11-362, Secretary O'Mara proposed allowing two MWh of generation from the Bloom fuel cell projects to potentially offset one REC of Delmarva's annual RPS obligation during the first 15 years of the project.⁴⁷ In addition, Secretary O'Mara proposed that six MWh of fuel cell generation should be permitted to offset one MWh of solar obligation during the project's first 15 years while three MWh of fuel cell production will be equivalent to one SREC during the remaining six years of the Bloom contract. The Secretary also proposed to limit fuel cell impacts on the state's SREC market by only allowing Delmarva to meet:

- 25 percent of its SREC obligation with qualifying fuel cell offsets during years 1-5,
- 30 percent of its SREC obligation with qualifying fuel cell offsets during years 6-15,
- 35 percent of its SREC obligation with qualifying fuel cell offsets during years 16-21 (O'Mara, 2011).

On December 1st, 2011, the Commission promulgated Order 8079 adopting the Secretary's proposed treatment of RPS offsets from the Bloom fuels cell projects (Delaware PSC, 2011).

Because the authorizing legislation give the Secretary the authority to define whether RECs or SRECs will be offset from the Bloom projects, there is no legislative or regulatory certainty as to what proportion of the Bloom contract production will be used to offset either REC or SREC obligations. During his testimony, Secretary O'Mara noted that the annual reductions in Delmarva's REC and SREC obligations would be determined through a collaborative process established by the Commission. According to Secretary O'Mara, both Delmarva and DNREC would be party to this process. Decisions about SREC and REC obligation offsets would prioritize the following factors:

- Minimizing customer impact,
- Avoiding ACP payments, and

⁴⁷ Each MWh of fuel cell production would qualify for only qualify to offset one REC during the remaining years of the project.

- Ensuring sufficient opportunity for in-state renewable energy market development (O'Mara, 2011).

As with other regulatory priorities, the above listed goals may be in tension. For instance, minimizing customer impacts may suggest first applying the Bloom project offsets to the higher priced Delmarva SREC obligation, while applying any excess offsets to the utility's main-tier REC obligation. However this policy choice may not maximize opportunities for in-state renewable energy market, as most main-tier RECs tend to be generated by out-of-state generators while the state's SREC program rules support in-state generators over out of state generators.

4.2. EXPECTED BLOOM FUEL CELL PROJECTS SREC OBLIGATION REDUCTIONS

Under the Commission-approved tariffs, Bloom energy will construct one 3 MW fuel cell unit in Newark and a second, multiphase 27 MW project in New Castle. Expected project timelines are provided below (New Energy Opportunities, Inc., 2011a):

- Brookside (Newark)—3.0 MW (Q2 2012)
- Red Lion I (New Castle)—5.4 MW (Q4 2012)
- Red Lion II (New Castle)—3.0 MW (Q2 2013)
- Red Lion III (New Castle)—8.0 MW (Q3 2013)
- Red Lion IV (New Castle)—10.6 MW (Q4 2013)

Table 41 provides maximum projected potential SREC offset from the Bloom projects for the 2012 to 2025 compliance years. This schedule assumes that each of the Bloom projects are commissioned during the final month of the above listed quarter and also assumes that the maximum Bloom offsets are applied to Delmarva's SREC obligation each year. For each MWh produced by the Bloom projects, six potential SREC offsets are created, this value is in the "Total SREC Offset Equivalent" column. The "Maximum SREC Obligation Reduction" column is calculated as the lesser of either the maximum allowable offset (see percentages above) or the total available Bloom SREC offset output. Other assumptions are discussed in the footnotes.

Table 41. Estimated Maximum Reduction in Delmarva SREC Obligations from Bloom Projects (2012-2025)

Compliance Year	Estimated Bloom Project Generation (MWh) ⁴⁸	Total SREC Offset Equivalent (MWh) ⁴⁹	Estimated Delmarva SREC Obligation ⁵⁰	Maximum SREC Obligation Reduction ⁵¹	Equivalent Reduced Generation (MW) ⁵²
2012	47,935	7,989	21,650	5,413	3.6
2013	190,898	31,816	38,810	9,703	6.5
2014	252,288	42,048	59,399	14,850	9.95
2015	252,288	42,048	75,486	18,872	12.6
2016	252,288	42,048	95,773	23,943	16.0
2017	252,288	42,048	116,651	34,995	23.4
2018	252,288	42,048	138,135	41,441	27.8
2019	252,288	42,048	160,237	42,048	28.2
2020	252,288	42,048	182,970	42,048	28.2
2021	252,288	42,048	206,350	42,048	28.2
2022	252,288	42,048	230,389	42,048	28.2
2023	252,288	42,048	255,104	42,048	28.2
2024	252,288	42,048	280,508	42,048	28.2
2025	252,288	42,048	306,617	42,048	28.2

As the table indicates, the maximum reduction in SREC obligation is projected to reduce total in-state PV installations by 28.2 MW starting in the 2019 compliance year. According to projection by SREC Trade, this would reduce the total installed capacity in Delaware by 12.7 percent in 2019.⁵³ Figure 20 below shows the relative size of the maximum Bloom-related SREC obligation reduction against the total projected Delmarva SREC obligation between 2012 and 2025.

⁴⁸ During tariff approval proceedings for the Bloom projects, PSC staff consultants assumed the Bloom projects would attain an average capacity factor of 96 percent (New Energy Opportunities, Inc., 2011a).

⁴⁹ Total Bloom project generation divided by 6 for all presented years

⁵⁰ 2012-2014 are based on SREC Staff Report Pg 11. 2015-2025 projections are based on 60 percent of estimated statewide SREC obligation estimated by SREC Trade (SREC Trade, 2012b).

⁵¹ Minimum of either 25 percent of SREC obligation from 2012-2016 or 30 percent of SREC obligation for 2017-2025 and total available SREC offsets

⁵² Based on "effective SREC" capacity factor a 17 percent from pilot solicitation. This added capacity factor accounts for the likelihood that future PV systems in the state will continue to qualify for some combination of the Delaware workforce or equipment bonuses. The value used in this analysis was derived from the average "effective SREC" capacity factor for winning bidders in the Pilot program.

⁵³ SREC Trade estimates that the Delaware SREC program will support 425.9 MW of PV during the 2025 compliance year.

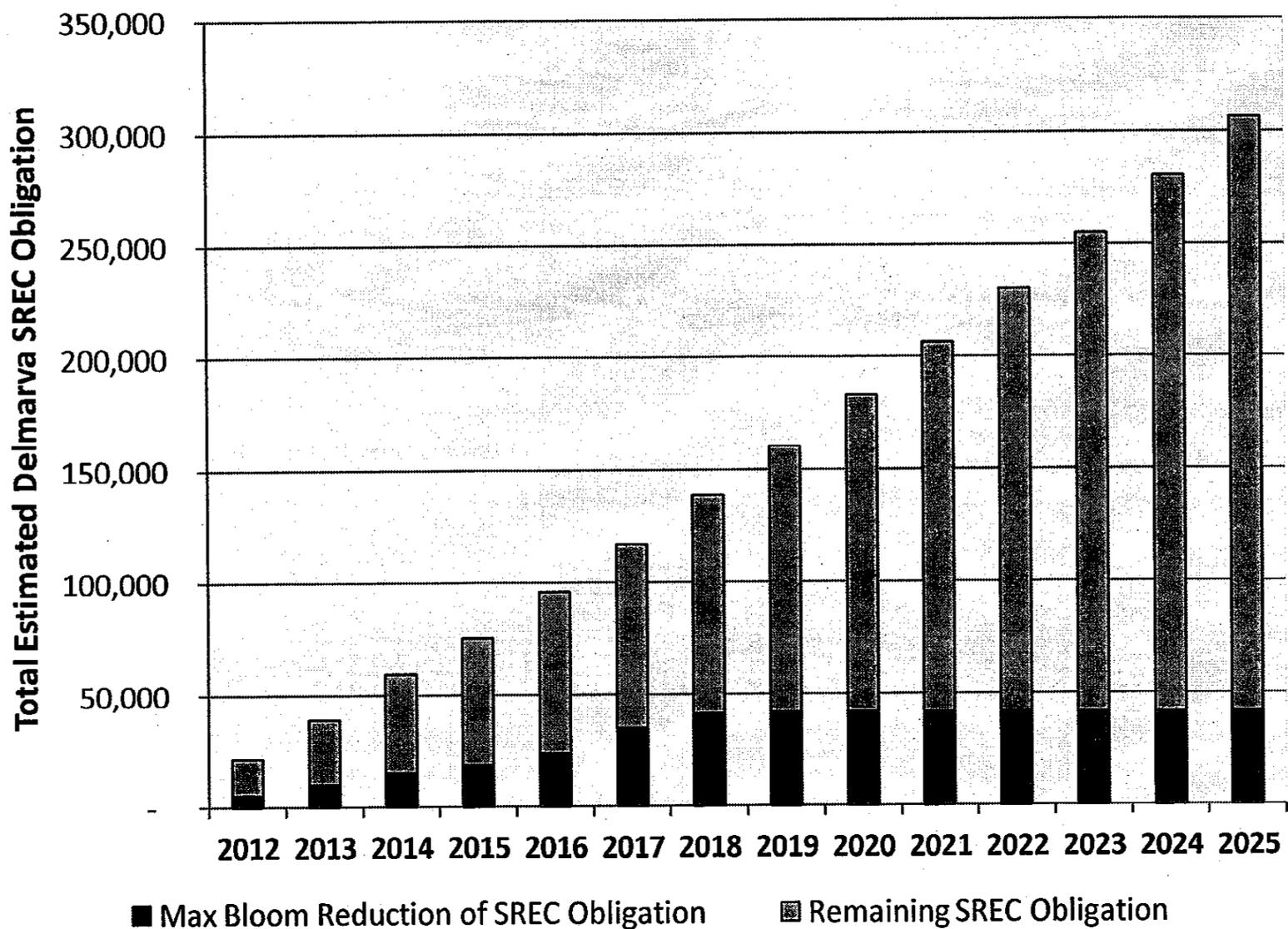


Figure 20. Estimated Annual Delmarva SREC Obligation and Maximum Bloom SREC Offset

As the figure shows, the maximum potential impact of the Bloom project on the SREC market increases every year from 2012 to 2018. Starting in 2019, the maximum annual offset from the Bloom project is reached for the 2012-2025 analysis period.

In 2027 the maximum potential SREC offset from the Bloom projects will be doubled when three MWh from the fuel cell projects will be allowed to offset one SREC.⁵⁴ During the period starting in 2027, the 30 and 35 percent limits on SREC obligation offsets from the Bloom projects are unlikely to be reached as total energy production from the fuel cells will not be sufficient to reach this cap.

⁵⁴ Compliance years 2026-2032 were not addressed in this analysis as SREC obligations for this period are not yet defined.

CHAPTER 5. PROGRAM DESIGN ANALYSIS

This chapter will examine a series of key questions posed by the Commission and other RETF members regarding the design of the Delaware SREC Pilot. Where possible, this program analysis will evaluate the Pilot based on the taskforce's legislative mandate to:

- Establish a balanced market mechanism for Renewable Energy Credit ("REC") and Solar Renewable Energy Credit ("SREC") trading;
- Establish REC and SREC aggregation mechanisms and other devices to encourage the deployment of solar energy technologies in Delaware with the least impact on retail electricity suppliers, municipal electric companies and rural electric cooperatives;
- Minimize the cost for complying with REPSA;
- Establish revenue certainty for appropriate investment in solar renewable energy technologies, including consideration of long-term contracts and auction mechanisms;
- Establish mechanisms to maximize in-state solar renewable energy generation and local manufacturing; and
- Ensure that residential, commercial and utility scale photo voltaic and solar thermal systems of various sizes are financially viable and cost-effective instruments in Delaware.

This chapter will be organized around three critical top areas: the first section will evaluate program cost effectiveness issues, the second will highlight issues related to consumer protection and the third will examine the impacts of the job-related aspects of the pilot. Where direct questions have been provided by the Commission or by RETF members, those questions are quoted in section headings.

5.1. PROGRAM COST EFFECTIVENESS QUESTIONS

The Commission and RETF members asked for responses to two specific questions related to program cost effectiveness. These are addressed in this section.

5.1.1. COMPARE THE COST EFFECTIVENESS AND RISKS OF THE COMPETITIVE BIDDING PROCESS TO THE ADMINISTRATIVELY SET PRICES IN TIERS 1 AND 2A?

As previously mentioned, the pilot used two separate methods for establishing SREC contract prices. The Tier 1 and Tier 2A standard offer rate was based on an administratively set price that was determined through financial modeling of a representative system. Tiers 2B and Tier 3 used a competitive auction with winners receiving contracts at as-bid prices. Each of these price setting approaches present potential risks and advantages for Delmarva ratepayers, project owners and policymakers. Table 42 presents some of the pros and cons of each approach from the perspective of each of these market participants.

Table 42. Pros and Cons of Administrative and Competitive Rate Setting from Different Market Participant Perspectives

	Ratepayers	Project Owners	Policy Makers
Administrative Rate Setting Pros	<ul style="list-style-type: none"> • Limited collusion risk • Lower risk of contract failure 	<ul style="list-style-type: none"> • Lowered administrative burden • Potential for higher-than-market pricing • Potentially earlier incentive price certainty for proposed systems 	<ul style="list-style-type: none"> • Limited collusion risk • Simplified solicitation process
Administrative Rate Setting Cons	<ul style="list-style-type: none"> • Potential above spot market SREC pricing • Potential for lower-cost projects to receive windfall price levels 	<ul style="list-style-type: none"> • Lottery systems disfavors more competitive and efficient developers 	<ul style="list-style-type: none"> • Potentially complicated rate-setting process • Lack of accurate and timely data for rate model inputs
Competitive Rate Setting Pros	<ul style="list-style-type: none"> • Rates follow market trends • Projects awarded rates based on specific project economics 	<ul style="list-style-type: none"> • Rewards competitive project developers • Bid complexity may reduce number of market entrants (pro and con) 	<ul style="list-style-type: none"> • Can be more confident in incentive price levels
Competitive Rate Setting Cons	<ul style="list-style-type: none"> • Increased risk of contract failure 	<ul style="list-style-type: none"> • Complexity and uncertainty may discourage some developers 	<ul style="list-style-type: none"> • Collusion risk requires market monitoring • Potential costs of administering auctions

As the table indicates some of the pros and cons for one stakeholder group are either in direct opposition with or in substantial agreement with the pros and cons of other stakeholder perspectives. Additionally, some of these general stakeholder categories could be further divided to include sub-groups (i.e. third-party system owners vs. local owners, or utilities vs. state energy offices vs. utility regulators) with each group having its own interests or mandates. Given the potential complexity involved with these diverse perspectives, the following section is limited to a discussion of the ratepayer perspective.

5.1.1.1. COMPETITIVE BIDDING

Evaluated from a ratepayer impact perspective, SREC contract pricing through competitive bidding provides several potential advantages over administratively set pricing, including:

- Market price responsiveness and more reliable price discovery
- As-bid contract pricing leading to minimum threshold project returns, and
- Simplified administrative processes.

Each of these will be discussed briefly below.

5.1.1.1.1. MARKET PRICE RESPONSIVENESS AND MORE RELIABLE PRICE DISCOVERY

Market prices from solar technology can change rapidly. As previously mentioned in this study, solar module prices have declined nearly thirty percent over the last twelve months, and industry analysts and government entities are expecting further declines in both the near-term and long-term (SolarBuzz, 2012; U.S. DOE, 2011). Establishing administratively set prices that reflect current market conditions in rapidly changing market environments can be challenging.⁵⁵ Administratively set prices that do not fully account for market cost declines risk paying above-market prices for SRECs, reducing policy cost effectiveness. Competitive bidding in a well-subscribed auction can avoid this issue by awarding SREC contracts that reflect current market conditions. Depending on how auctions are designed, however, prices can also be delivered that are “too high” or “too low” as a result of strategic, collusive, or poorly informed bidding.

Additionally, under an administratively set pricing process, model inputs must frequently be determined through interviews and surveys of project developers as independent, third-party information is often not available for many model inputs. While there is no indication that this was an issue during the Delaware rate-setting process, project developers may have conflicting interests in providing market data that is eventually used to establish administratively set rates. This is not an issue with competitively established SREC contract rates.

5.1.1.1.2. AS-BID CONTRACT PRICING AND MINIMUM RETURN THRESHOLDS

Under administratively set pricing, all selected projects are awarded the same SREC contract price, while under the auction mechanism used in Tiers 2B and 3, projects were awarded SREC contracts at the project owner’s bid price. As previously mentioned in Chapter 2 most market databases indicate that installed costs and other critical project factors can show significant variance within a single state market meaning that low-cost projects awarded contracts through an administratively set process may receive higher than necessary returns. If a primary state-level policy goal is for Delmarva to acquire a limited volume of SRECs at the least costs to ratepayers, awarding competitive contracts to lowest-cost bidders should result in lower overall compliance costs.

5.1.1.1.3. POTENTIALLY SIMPLIFIED ADMINISTRATIVE PROCESSES

One potential advantage of competitive auctions is that they may avoid the need for a stakeholder negotiated rate setting process and potentially complicated regulatory rate approval. In some jurisdictions final approval of administratively set rates can be an administratively burdensome process requiring extensive regulatory commission involvement and independent analysis.⁵⁶ The administratively set prices for the Delaware pilot were developed over several months with multiple pricing iterations in an effort to respond to changing market dynamics.⁵⁷ This was followed by the required regulatory approvals by the Commission. Under the competitively-priced tiers, the rate approval administrative process may be either avoided or significantly shortened.

⁵⁵ Germany, which has regularly had the world’s largest solar market, uses administratively set prices as its main solar incentive. Unlike the Delaware Pilot, the German incentive program does not include a volume cap. The Germans have instituted volume-responsive incentive triggers that reduce incentive levels as the market grows.

⁵⁶ It should be noted that developing auction program rules may also require a lengthy regulatory rulemaking processes.

⁵⁷ For reference, the Rhode Island DG standard offer rate setting process took two months to complete while rate setting for the Vermont SPEED standard offer took more than six months.

5.1.1.2. ADMINISTRATIVE PRICING

Administratively-set price setting is the most widely used method for established standard offer solar incentive rates in the world. Most of the leading global solar markets have used administratively-set prices. Some of the potential ratepayer advantages of this method include:

- Limited collusion risk, and
- Lower risk of contract failure.

Each of these will be discussed briefly below.

5.1.1.2.1. LIMITED COLLUSION RISK

Administratively set contract pricing effectively avoids the risk that market participants will collude in an auction process to drive up clearing prices. Thinly subscribed competitive auctions may not produce the most cost-effective outcomes if participants are able to collaboratively bid pricing. In a worst-case scenario, collusive bidding could result in auction prices that exceed aggressively-set administratively determined prices. This potential issue was cause for enough concern in New York that it led policy makers to abandon plans for a competitive REC auction (Kreycik, Couture, & Cory, 2011). Collusion and the potential ratepayer impacts of collaborative bidding may be of particular concern in a relatively small solar market such as Delaware where there are a limited number of market participants.

5.1.1.2.2. LOWER RISK OF CONTRACT FAILURE

A number of studies have reported that contract failure rates for competitively bid renewable energy projects can be as high as 50 percent (Kreycik, Couture, & Cory, 2011). This phenomenon may in large part be due to project developers bidding prices that are too aggressive in an effort to win solicitation while not having a complete understanding of final project costs. Developing an accurate competitive bid price can require significant effort in order to fully quantify all relevant project costs. Given solicitation deadlines, project developers may not have either the time or the resources to complete all the necessary due diligence required to submit an accurate bid. This can result in developers under-bidding into auctions. During the project development stage, owners may be forced to abandon their plans when actual project costs exceed those assumed as part of the competitive bid.

Delaware SREC pilot rules include a requirement for a bid deposit of \$100/kW⁵⁸ that is forfeited in the event a project is not commissioned within twelve months of contract signing.⁵⁹ This provision is intended to deter developers from entering speculative bids in the auction tiers. State policy makers and the Commission may wish to evaluate the effectiveness of the bid deposit at the end of twelve months to better understand issues around contract failure rates specific to the Delaware SREC market.

Administratively set prices may create a financial cushion for many of the awarded projects. In the event that developers discover that actual project costs are above costs anticipated at the time of the solicitation, some projects may be able to still proceed.

In the near term, with spot market SREC prices at all-time lows, high SREC contract failure rates may be less of an issue for Delmarva ratepayers. If solicitation winners are unable to deliver their expected SRECs, Delmarva should be able to make up any shortfall through low-cost spot market purchases; however, during periods when

⁵⁸ For reference, bid deposits for the New Jersey EDC contracting program were \$75/kW with a \$20,000 cap (N.J. BPU, 2009) and \$20/kW for systems smaller than 5MW in the Californian Renewable Auction Mechanism program (California PUC, 2016).

⁵⁹ This deadline can be extended as a result of utility interconnection delays or Force Majeure events.

spot market prices may be near the alternative compliance payment levels, SREC contract failures may have a significant ratepayer impacts.

5.1.1.3. CONCLUSIONS REGARDING TIER 1 AND 2A ADMINISTRATIVE PRICES VS. COMPETITIVE BIDDING

Future iterations of the SREC pilot procurement may be able to lower ratepayer costs by competitively bidding one or both of the administratively set tiers. This would have several advantages including:

- More responsiveness to current market conditions,
- Incentivizing only the lowest cost installations, and
- Reduced regulatory administrative burden.

While these advantages are clear benefits of competitive bidding process, competitively bidding the Tier 1 size class may present some challenges. Survey results indicate that some of the homeowners targeted in this tier may not have a clear enough understanding of the SREC program regulations and PV project economics to submit fully informed competitive project bids.⁶⁰ The state, through the RETF, may wish to explore options for setting Tier 1 standard offer pricing at some multiple of the Tier 2 competitively bid prices. This may be one way to ensure that Tier 1 pricing is responsive to market dynamics without creating a burdensome competitive bidding process.

5.1.2. HOW CAN THE PROGRAM BE DESIGNED TO MINIMIZE RATEPAYER COSTS GIVEN THE OTHER OBJECTIVES SET FORTH IN REPSA?

The RETF could explore a number of changes to the existing pilot structure in order to minimize ratepayer costs. These could include:

- Implement a more competitive tiering structure,
- Tie administratively set pricing to competitive tiers, and
- Address issues surrounding stranded systems.

Each of these topics will be discussed below.

5.1.2.1. IMPLEMENT A LESS GRANULAR TIERING STRUCTURE

The tiering approach used in the pilot program may have increased the total ratepayer program costs, and a less granular tiering structure during the next solicitation round could result in more competitive pricing. As mentioned in Chapter 1, the weighted average price for SRECs awarded under Tier 2B was lower than the weighted average for Tier 3. Additionally, several systems that bid into Tier 2B that were not awarded contracts could have bid the same prices into Tier 3 and been awarded contracts. Similarly, two systems that could have qualified for the Tier 2A standard offer chose to submit competitive bids in Tier 2B and one of these systems was awarded a competitive contract.⁶¹ As Figure 21 shows, in the competitively bid tiers there was a positive correlation between system size and price bid, indicating that bid prices increased as project sizes increased.⁶²

⁶⁰ The state could also be presented with a challenging scenario if a high percentage of winning competitive Tier 1 projects fail requiring a large number of homeowners to forfeit their bid deposits.

⁶¹ The second system was not awarded a contract under Tier 2B, but, had this system submitted the same bid into the Tier 3 auction, it would have been awarded a contract.

⁶² This positive correlation is significantly reduced if the large outlier system is removed from the data set, however a positive correlation is still seen even without this outlier.

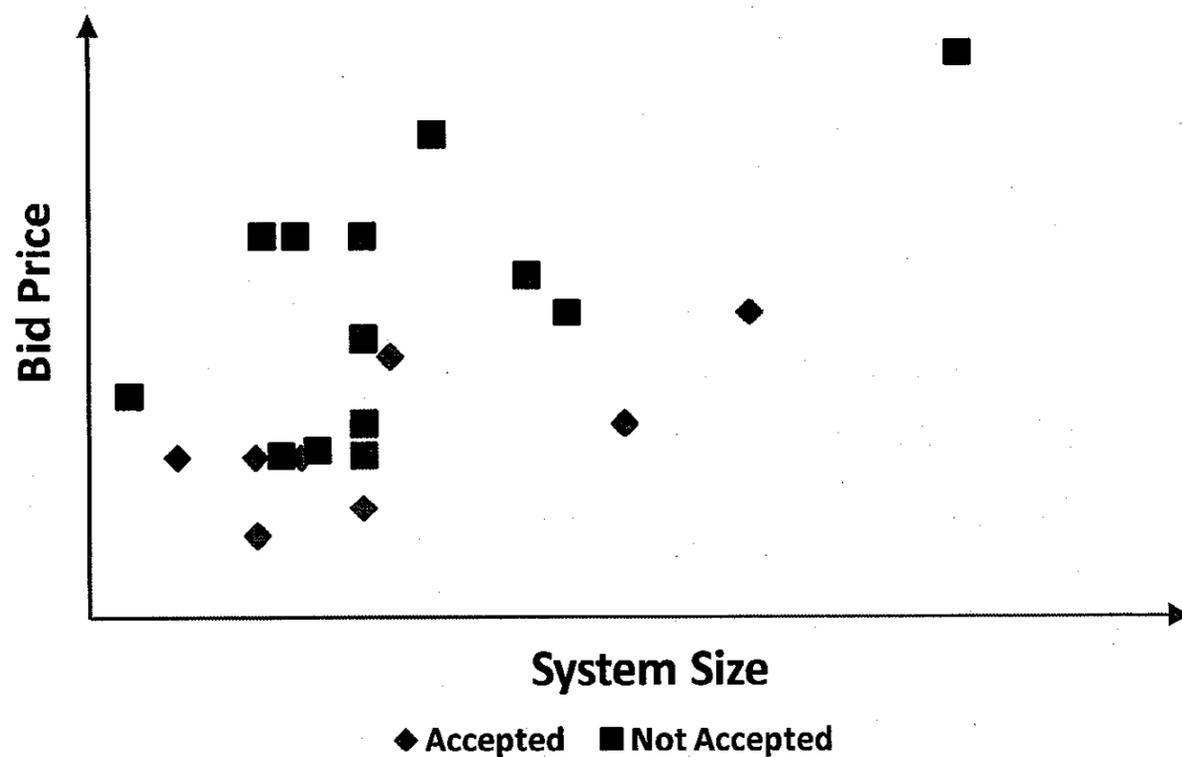


Figure 21. Tier 2B and Tier 3 Bid Prices vs. System Sizes (Note: Axes scale removed to anonymize data)

This counterintuitive result may indicate that either:

- 1) the assumption behind the tiering decisions--that smaller systems are unable to compete with larger systems--was incorrect or,
- 2) the number of bids in the solicitation was insufficient to demonstrate the expected economies of scale in the market.

Regardless of which of these conclusions is correct, one potential program solution that could prevent future solicitation from having this issue while reducing ratepayer impacts would be to decrease the number of program tiers.

Given that the RETF's legislative mandate specifically mentions creating a market for residential, commercial and utility-scale system sizes, the next solicitation could, at a minimum, have as few as two tiers. One tier could be dedicated to residential systems, while the second tier could be dedicated to all systems larger than the residential tier cap but less than 2MW. The third Tier, for utility-scale systems, has already been allocated to the Dover Sun Park project. This approach would likely create the most competitive market while still meeting the RETF's legislative mandate. This approach may also be attractive as Delmarva projections for the next pilot program round suggest that an even smaller volume of SRECs will be procured, if any.⁶³ This simplified tiering approach would, however, run the risk that bids in the next solicitation showed the economies of scale expected in the market and that a few large systems would dominate the solicitation leaving no SREC available for rooftop commercial systems. Policy makers may wish to weigh this risk against the program's cost minimization goals during the next program design round.

5.1.2.2. TIE ADMINISTRATIVE PRICES TO COMPETITIVE TIER PRICES

As noted previously, one potential approach to lowering overall ratepayer costs associated with the SREC pilot program would be to tie prices for future administratively set tiers to costs in the competitively bid solicitations.

⁶³ If the volume of SREC to be procured in the next round is lower than in the previous round, the RETF may wish inquire about how and if other SREC obligated entities in the state could be included in the next solicitation round.

This would ensure that administratively set prices are responsive to market trends while still providing the administrative streamlining that may be necessary to best serve system owners in this tier. This potential approach has been discussed at recent RETF meetings and may be a promising solution to a number of problems.

A number of potential options could be explored for establishing what, if any, price premium Tier 1 should be granted above the auction tiers. A full account of these potential methods is beyond the scope of this study, however some potential approaches could include:

- Offer standard price contracts for Tier 1 at the highest winning bid price for the Tier 2 auction,
- Determine a consensus price multiplier based on a cash flow model analysis of the difference between residential and commercial systems economics, accounting for all available incentives, or
- Set the Tier 1 rate to the weighted average winning price for the Tier 2 auction. If the program is under-subscribed after an opening round, raise the rate by a fixed percentage and re-open the lottery.⁶⁴

There are likely many other potential options for ensuring that administratively set prices are more responsive to market conditions and, in the interest of Delmarva ratepayers, the RETF and the Commission should explore these during the next program development round.

5.1.2.3. COMPETITIVELY PROCURE SREC FROM EXISTING SMALL SYSTEMS

The Delaware SREC market is currently oversupplied, with spot market prices from 2011 SRECs consistently below \$60 (SRETrade, 2012f). Owners of existing systems in the state may not be able to find buyers for their SREC in the near term. Many of these owners applied for but were not awarded contracts under the first round of the pilot program. Given the current oversupply and the significant number of "stranded" systems, these system owners may be willing to sign long term SREC contracts between the spot market price and the Tier 1 and Tier 2A administratively set prices. Additionally, these systems have already completed construction and have financed their projects. Given the policy thesis behind the long-term contracting program is that bankable SREC offtake contracts are a necessary precursor to financing solar projects, these existing stranded systems may deserve fundamentally separate treatment than under-development system, as they have already received sufficient financing.

One potential means of lowering long-term compliance costs of the SREC program would be to hold a separate auction for contracts exclusively for existing systems. Residential existing system owner may be better candidates for a competitive auction, as they do not need to account for unknown construction costs since their projects are already commissioned. These system owners may view another auction as a final opportunity to gain a long-term revenue stream from their PV systems potentially resulting in very competitive SREC pricing. This approach could have several benefits:

- Lower long-term ratepayer impacts,
- Bring the state solar market back into balance by clearing the backlog of stranded systems, and
- Reduce consumer resentment resulting from being locked out of the SREC market.

Instituting such a policy could result in a slow-down in the development of new systems in Delaware as new system would likely have to wait for another SREC procurement round to receive contracts. This would conflict with the RETFs mandate to maximize in-state economic growth. While this may be the case, it should be noted that the legislatively mandated SREC market growth rate is currently the fundamental limiting factor to the growth of the state's solar market and implementing policies that further exacerbate the existing oversupply by encouraging new installations will benefit installers to the detriment of existing system owners.

⁶⁴ This strategy could be vulnerable to collusion between applicant entities and any similar policy should be carefully monitored to ensure that market actors are not driving up market clearing prices.

5.1.3. COMPARE THE COST EFFECTIVENESS AND RISKS OF THE LONG-TERM CONTRACTS RELATIVE TO PURCHASES OF SRECS ON THE SPOT MARKET

Pure REC and SREC markets without price support mechanisms are inherently volatile. In a typical REC market, demand is inelastic, as it is a legislatively mandated function of consumer electricity consumption. Similarly, REC supplier typically have limited information about other market actors and may not make well informed decisions about market dynamics leading to oversupplied markets. These and other factors lead to inherent market oscillations, with markets seeing periods of high costs related to market scarcity quickly shifting to extended periods of oversupply characterized by low credit prices (Ford, Bogstad, & Flynn, 2007).

While the current Delaware SREC market is in a state of oversupply, there is no guarantee that this market state will continue as Delmarva's compliance requirement continues to grow. If current market conditions lead to under investment in solar projects, the Delaware SREC market could quickly revert to an undersupplied state with Delmarva having to pay near-ACP prices for SRECs. In addition to this inherent market volatility, legislators in a number of states have actively sought to "fix" oversupplied SREC market by attempting to pass legislation accelerating compliance schedules, shifting oversupplied markets back to under-supply. Legislators in Delaware, Pennsylvania, Maryland and New Jersey have either passed or proposed legislation to accelerate SREC compliance schedules supporting SREC market prices (SRECTrade, 2012d; SRECTrade, 2012e; SRECTrade, 2012c; Delaware Senate, 2012). It is unclear whether these efforts will result in long-term market stability or will only temporarily reset the inherent boom-bust market dynamic.

A utility SREC procurement strategy that relies primarily on spot market can be an advantage to ratepayers during periods of market oversupply, but can also be a burden during periods of market scarcity. Long-term SREC contracts are one fundamental means utilities can use to reduce ratepayer exposure to SREC market volatility.

Table 43 below illustrates the potential protection long-term contracts can afford to ratepayers. This table provides a hypothetical example of two simplified utility SREC purchase strategies: spot market purchases and long-term contracting. Under the spot market scenario, the market is undersupplied in the early years as the obligation is insufficient to support existing installations. During later years, the market oscillates between oversupply (\$30) and under supply (\$390) with two years of oversupply for every year of under-supply.⁶⁵ Under the long-term contracting scenario, the utility has contracted for 20-year SRECs contracts at just under \$147 per SREC (the average weighted SREC price for the competitive pilot tiers). The hypothetical SREC obligation follows the current annual ramp rate under REPSA.

⁶⁵ Note: this scenario is only presented to illustrate how long-term contracting can be used to hedge against SREC market volatility. These assumptions are for illustrative purposes only. A more thorough model of SREC price volatility risk is beyond the scope of this analysis. Alternative spot market scenarios would result in different results.

Table 43. Comparison of Two Utility SREC Compliance Strategy Costs

	Utility SREC Obligation	SREC Spot Prices	Spot Market Strategy Annual Cost	SREC Contract Prices	Contract Strategy Annual Cost
2011-12	14,224	\$30	\$426,726	\$147	\$2,093,944
2012-13	28,876	\$30	\$866,268	\$147	\$4,250,777
2013-14	43,963	\$30	\$1,318,896	\$147	\$6,471,823
2014-15	59,497	\$30	\$1,784,898	\$147	\$8,758,494
2015-16	75,486	\$30	\$2,264,580	\$147	\$11,112,294
2016-17	95,773	\$390	\$37,351,548	\$147	\$14,098,773
2017-18	116,651	\$30	\$3,499,542	\$147	\$17,172,253
2018-19	138,135	\$30	\$4,144,050	\$147	\$20,334,853
2019-20	160,237	\$390	\$62,492,274	\$147	\$23,588,430
2020-21	182,970	\$30	\$5,489,100	\$147	\$26,935,014
2021-22	206,350	\$30	\$6,190,488	\$147	\$30,376,725
2022-23	230,389	\$390	\$89,851,788	\$147	\$33,915,594
2023-24	255,104	\$30	\$7,653,114	\$147	\$37,553,830
2024-25	280,508	\$30	\$8,415,234	\$147	\$41,293,553
2025-26	306,617	\$390	\$119,580,552	\$147	\$45,137,059
Total Cost			\$351,329,058		\$323,093,417
NPV of Total			\$164,087,684		\$161,452,339

Using a seven percent discount rate, the costs of these two scenarios is \$164 million for the spot-market strategy and \$161 million for the long-term contracting strategy.⁶⁶ Under the spot market scenario, ratepayers are exposed to high potential total ACP charges if the market is short in the later years. The higher SREC volume requirements in these later years pose a significant ratepayer costs risk. The long-term contracting scenario effectively mitigates this risk by eliminating ratepayer exposure to these costly price spikes. Under the existing pilot structure, contracts include a significant step-down in SREC prices after year ten. This contracting mechanism will allow Delmarva access to a steady stream of low-cost SRECs during a period of time when spot market volatility has a significant potential impact on ratepayers.

While the numbers presented in this example are hypothetical, they illustrate the substantial impacts that periodic, cyclical SREC shortages can have on policy compliance costs.⁶⁷ Given this, and the relatively low costs seen in the competitive tiers of the SREC pilot, state policy makers may wish to consider encouraging obligated entities to pursue long-term SREC contracts for a proportion of their compliance requirements in order to hedge against future market volatility.⁶⁸

⁶⁶ This example is not intended to illustrate that one strategy is inherently more cost effective than another, but is intended to illustrate how an SREC market that is undersupplied only one quarter of the time can result in total ratepayer costs that are nearly the same as under a competitively-priced long-term contracting strategy.

⁶⁷ It should be noted that long-term contracting can also present a risk to ratepayers if legislative or regulatory changes reduce utility SREC obligations. Utilities may be able to mitigate this risk through contract provisions that protect ratepayers in the event of major regulatory changes.

It is also important to note that long-term SREC contracting has also been reported to substantially lower developer project financing costs (Baratoff, Black, Burgess, Felt, Garratt, & Guenther, 2007). Potential bank lenders are typically unwilling to provide capital to solar projects with uncertain future SREC revenue streams as volatile SREC markets can present a significant risk that project developers will be unable to service their debt obligations. Long-term contracting removes this risk, lowering overall project financing costs. At a state-wide scale, the phenomenon could also help reduce total policy compliance costs by reducing required project investment returns.

5.2. CONSUMER PROTECTION

Many of the survey respondents expressed frustration with their system installer and suggested that they felt that they were misled about their ability to benefit from the Delaware SREC market.⁶⁹ Given the current market oversupply and the high number of "stranded" systems in the state, Delaware policy makers may wish to evaluate if appropriate consumer protections are in place related to the SREC market.

Many residential PV installers sell their systems, in part, by highlighting the financial returns associated with solar investments. Unlike most other home improvements, solar project proposals frequently include cashflow projections and investment return calculations.⁷⁰ The Delaware SREC program is a complex regulatory market, and some homeowners may not be following state energy policy developments closely enough to properly evaluate the risks associated with this dynamic market. Consequently, solar installers may be a homeowner's primary or only source of information regarding market conditions, expected returns, and potential future changes to state-level policies. This could be a cause for concern amongst state regulators as PV installers may not be in the best position to explain the downside risks associated with the Delaware SREC market to potential customers.⁷¹

To date, no state surveyed as part of this report has implemented a strong consumer protection program related to its SREC markets. If Delaware were interested in moving forward on this issue, the state could be the first to establish national best practices. Some approaches Delaware policymakers could consider include:

- Requiring all system owners to sign an acknowledgement that highlights the risks associated with the SREC market,
- Creating an SREC market educational guide for homeowners,
- Establishing state-wide standards for modeling assumption solar installers can use when developing project financial projections for homeowners, or
- Holding state-sponsored educational sessions to educate homeowners about the risks and benefits of the SREC program.

In the interest of consumer protection, the Commission and the Task Force may wish to carefully consider how the next rounds of the pilot program are structured. One of the primary advantages of a solicitation-supported SREC market is the ability to match market demand with market supply through a competitive tender. It is an open question whether, given current SREC market conditions, the state should design policies that encourage homeowners to install systems in advance of having won an SREC contract. This approach risks further

⁶⁹ One disgruntled system owner suggested in the survey that they were prepared to file a fraud lawsuit against their system installer.

⁷⁰ Note: A recent survey of residential solar project proposals in Massachusetts from several nationally prominent installers revealed cash flow modeling assumptions that greatly overestimated potential homeowner savings.

⁷¹ Additionally, risks associated with changes to the regulatory environment are extremely difficult to assess and major changes to state policies may be unforeseeable even for installers who closely follow state solar policymaking.

exacerbating the current market oversupply and would likely lead to even more "stranded" residential installations.

Solar PV installations make more financial sense in Delaware with the ability to access the SREC market, and homeowners would be less likely to invest in \$35,000 systems without the ability to recoup their investment through SREC sales. With that, the state may wish to carefully consider program structures in which a homeowner installs a system and then "takes a chance" that they will be awarded access to the SREC market through future Pilot solicitation. Given the uncertain nature of the SREC lottery system (in an over-scribed market), homeowners need to fully understand the risks associated with the program in advance of the solicitation.

5.3. HOW CAN THE PROGRAM BE DESIGNED WITH REGARD TO THE OBJECTIVE OF MAXIMIZING IN-STATE SOLAR RENEWABLE ENERGY GENERATION AND LOCAL MANUFACTURING?

Eighty-four percent of all capacity entering the solicitation claimed the Delaware workforce bonus, while sixty-eight percent of all capacity entered claimed the Delaware manufactured equipment bonus. Of projects that were awarded contracts, all winning Tier 1 and Tier 2A entrants claimed both bonuses. In the competitive tiers, where applicants were not granted a selection preference based on Delaware labor and manufactured content, Seventy-six percent of total winning capacity claimed the workforce bonus while sixty-four percent of winning capacity claimed the manufacturing adder.

From these results, it is clear that the pilot program, and the existing legislatively established multipliers, provided significant incentive for system owners to hire Delaware installers and use Delaware-manufactured panels. In fact, given that lottery preference was given to systems that claimed both multipliers and that the volume of SRECs entering the lottery from systems claiming both multipliers exceeded total contract availability, winning a Tier 1 or Tier 2A contract required that the system include both Delaware labor and manufactured content. Beyond implementing similar preference-based selection criteria for the competitive tiers, it may be difficult to design a policy that more effectively encourages use of Delaware products under the mandate of the RETF.

One potential issue raised in the participant survey specific to the Tier 1 and Tier 2A lotteries related to consumer's available panel choices. Some respondents commented that their preferred Delaware installer did not have access to panels that qualified for the Delaware equipment bonus, effectively preventing systems from those installers from participating in the program. Installers may have long-term panel supply agreements with particular module manufacturers and some Delaware installers may not have a relationship with Motech, the only panel manufacturer currently in Delaware. Given current program rules and legislative restrictions, installers that cannot procure Motech manufactured panels may have a challenging time working in Delaware. Limiting the pool of installers serving the Delaware solar market could also have the effect of raising system costs in the state.

Another potential issue related to the pilot and the creation of a de facto Delaware equipment requirement for Tier 1 and Tier 2A systems includes state-level market risks. The upstream solar market has experienced significant consolidation in the past few months with dozens of manufacturers declaring bankruptcy, and many analysts expect this trend to continue for the foreseeable future (Greentech Media, 2012). System owners with panels from firms that have declared bankruptcy may have a challenging time claiming product warranties in the event that their systems do not meet guaranteed performance requirements. While this is a general risk all PV system owners take when installing a system, in a typical state the market-level risk related to this issues is minimal as many panel manufacturers sell products in the state. However, current Delaware policy could highly

concentrate this risk if the state effectively requires that only panels from in-state manufacturer (which there is currently one) are used to comply with its RPS. If the Delaware market develops such that only panels from a single in-state manufactured source are installed in the state, in the event of a financial or quality disruption, it is unknown if Delaware residents and businesses would be able to take advantage of warranty protections should their systems perform below guaranteed output levels. Policy makers may wish to weigh whether the benefits of in-state manufacturing outweigh the market concentration of this risk across most of the state's SREC eligible PV systems.

One effect of the existing, legislatively mandated SREC multiplier method of encouraging in-state economic development is that it reduces the total number of systems installed in the state. Given the high number of systems qualifying for these multipliers, the actual installed capacity resulting from the pilot's first solicitation will be 16 percent lower than had the multipliers not been available.⁷² This has the effect of reducing the required total installed capacity in the state by nearly 1,300 kW.⁷³ It is likely that a high proportion of this avoided capacity would have been installed using Delaware labor and may have used Delaware-manufactured panels. This avoided capacity could also have reduced the number of stranded system in the state. A more formal analysis would be required to determine whether this loss of installed capacity was a net job-creator for Delaware or whether this reduced installed capacity actually reduces beneficial economic activity in the state. The structure of the economic development multipliers in REPSA is a legislative matter, and is beyond the purview of either the Commission or the RETF.

Other jurisdictions have explored ways to incentivize the use of in-state labor or manufactured equipment. For instance Massachusetts provides an adder for using equipment manufactured in-state as part of its Commonwealth Solar II rebate program. The Canadian province of Ontario has developed a more aggressive policy, only allowing PV systems that meet a certain local-content threshold to qualify for its feed-in tariff. This policy has lead several inverter manufactures to establish manufacturing facilities in the province. While this approach has, to a degree, been successful in Ontario, the size of the Delaware market may not be sufficient to attract new manufacturing capacity under a similar policy regime.

⁷² Actual first-year SRECs expected from solicitation winners totaled 9,872 while "effective" expected annual SRECs (ie. total expected SRECs generated after all multipliers are included) are 11,472.

⁷³ Note: This is roughly equivalent to 170 average-sized residential PV systems.

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APPENDIX A. SURVEY QUESTIONS

Questions to Ask	Question Type	Answer Choices
Applicant Overview		
Did you participate in the SREC Procurement Pilot Program's solicitation for a single system or as an Owner's Representative?	Multiple Choice	<ul style="list-style-type: none"> • Single System • Owner Representative
[Owner's Representative] Project Information		
How many projects did you complete applications for?	Drop down menu	1 -20+
At the time the applications were submitted, how many of the projects were proposed, and how many were commissioned?	Drop down menu	Proposed projects: 1-20+ Commissioned projects: 1-20+
Please identify the number of projects you submitted in each size category	Drop down menu	<ul style="list-style-type: none"> • > 50 kW • 50 kW – 250 kW • 250 kW – 500 kW • 500 kW – 2000 kW • < 2000 kW
Please identify the number of projects you submitted for each tier	Drop down menu	<ul style="list-style-type: none"> • Tier 1 • Tier 2a • Tier 2b • Tier 3
Would you prefer a competitive bid process for Tiers 1 and 2a instead of administratively set pricing?	Single Select Multiple Choice	<ul style="list-style-type: none"> • I would prefer a competitive bid process • I would prefer administratively set prices
How many of your applications were accepted?	Drop down menu	1-20+
Please identify how many of your projects were eligible for the Delaware workforce and/or equipment bonus.	Drop down menu	Delaware workforce bonus: 1-20+ Delaware equipment bonus: 1-20+
If one or more of your projects were not eligible for the Delaware workforce and/or equipment bonus, why not? (check all that apply)	Multiple Select Multiple Choice	<ul style="list-style-type: none"> • Bonus was not financially sufficient to offset cost increase • Equipment/workforce did not meet technical requirements for project • Equipment/workforce was not available • All of my projects were eligible • Other (please specify)
[Single System] Project Information		

Project Size	Single Select Multiple Choice	<ul style="list-style-type: none"> • > 50 kW • 50 kW – 250 kW • 250 kW – 500 kW • 500 kW – 2000 kW • < 2000 kW
What tier did you apply for?	Single Select Multiple Choice	<ul style="list-style-type: none"> • Tier 1 • Tier 2a • Tier 2b • Tier 3
For future solicitations, would you prefer a competitive bid process for Tiers 1 and 2a instead of administratively set pricing?	Single Select Multiple Choice	<ul style="list-style-type: none"> • I would prefer a competitive bid process • I would prefer administratively set prices
Was your project online at the time you submitted your application?	Single Select Multiple Choice	<ul style="list-style-type: none"> • My project was online • My project was proposed
Was your project accepted into the program?	Single Select Multiple Choice	<ul style="list-style-type: none"> • My project was accepted • My project was not accepted
Was your project eligible for the Delaware equipment bonus?	Single Select Multiple Choice	<ul style="list-style-type: none"> • My project was eligible for the equipment bonus • My project was not eligible for the equipment bonus
Was your project eligible for the Delaware workforce bonus?	Single Select Multiple Choice	<ul style="list-style-type: none"> • My project was eligible for the workforce bonus • My project was not eligible for the workforce bonus
If the project was not eligible for the Delaware workforce and/or equipment bonus, why not? (check all that apply)	Multiple Select Multiple Choice	<ul style="list-style-type: none"> • Bonus was not financially sufficient to offset cost increase • Equipment/workforce did not meet technical requirements for project • Equipment/workforce was not available • My project was eligible for both bonuses • Other (please specify)
Who was your owner representative?	Text Field	
Overall, how satisfied were you with your owner representative?	Single Select Multiple Choice	<ul style="list-style-type: none"> • Very satisfied • Somewhat satisfied • Neutral • Somewhat dissatisfied • Very dissatisfied
Effectiveness of Marketing		
How did you learn about the SREC pilot program solicitation?	Multiple Select Multiple Choice	<ul style="list-style-type: none"> • Delaware Public Services Commission (PSC) • Delaware Energy Office

		<ul style="list-style-type: none"> • SRECDelaware.com • Delmarva • Delaware Sustainable Energy Utility • Solar installer • Owners representative • Newspaper or Magazine • Online Blog • Online Social Network • Friend/Colleague • SRECTrade • Other (specify)
Do you think SRECTrade/Sustainable Energy Utility (SEU) did an adequate job of notifying the solar community about the solicitation?	Single Select Multiple Choice	<ul style="list-style-type: none"> • Yes • No
If you answered no to the previous question, please explain how SRECTrade/SEU could have done a better job of notifying the solar community.	Text field	
Customer Satisfaction		
<p>Please rate your experience on the following attributes of the solicitation administration:</p> <ul style="list-style-type: none"> • Solicitation timeline • Clarity of eligibility criteria • Fairness of eligibility criteria • Ease of filing application • Quality of online systems • Terms of SREC transfer agreement 	Rate items on a scale	<ul style="list-style-type: none"> • Very satisfied • Somewhat satisfied • Neutral • Somewhat dissatisfied • Very dissatisfied • Not applicable
<p>Please rate your experience with the following attributes of the question and answer process:</p> <ul style="list-style-type: none"> • Length of question and answer period • Timeliness of responses • Quality of responses • Overall satisfaction with the Q&A process 	Rate items on a scale	<ul style="list-style-type: none"> • Very satisfied • Somewhat satisfied • Neutral • Somewhat dissatisfied • Very dissatisfied • Not applicable
How do you feel the administrative requirements for this program compare to similar programs in other states?	Single Select Multiple Choice	<ul style="list-style-type: none"> • Fewer administrative requirements • Average administrative requirements • More administrative

		requirements <ul style="list-style-type: none"> • I do not have experience with other state procurement programs
Did you perceive any additional risk associated with contracting through the Sustainable Energy Utility instead of directly through Delmarva?	Single Select Multiple Choice	<ul style="list-style-type: none"> • Yes • No
In general, do you think the program was fairly and effectively administered?	Single Select Multiple Choice	<ul style="list-style-type: none"> • Yes • No
If not, why not?	Text field	
Please tell us how we can improve the program for future solicitations.	Text field	

Exhibit B

STATE OF DELAWARE

2013 PROGRAM

FOR THE PROCUREMENT OF

SOLAR RENEWABLE ENERGY CREDITS

November 20, 2012

TABLE OF CONTENTS

1.	Statutory Background	1
2.	Solar Renewable Energy Credits	2
	2.1 General	2
	2.2 Banking of SRECs	2
	2.3 Bonus for Use of In-State Equipment or Workforce	3
3.	The Delaware Renewable Energy Taskforce.....	3
4.	Program Administration; Eligibility	5
	4.1 Public Solicitations	5
	4.2 Owner Qualifications	6
	4.3 Eligible Projects	6
	4.4 Ongoing Program Evaluation	7
5.	Bid Applications	8
	5.1 General Requirements.....	8
	5.2 Estimated Output	9
	5.3 Bid Deposit	9
6.	SREC Transfer Agreements.....	10
	6.1 Term of Agreement.....	11
	6.2 SREC Quantity.....	11
	6.3 Pricing	12
	6.4 Utility Interconnections	12
	6.5 Guaranteed On-Line Date; Delay Liquidated Damages	12
	6.6 Payment	13
	6.7 Metering	13
	6.8 Conditions Precedent	13
	6.9 Performance Credit Support	14
	6.10 Project Maintenance; Inspections	14
	6.11 Excused Performance.....	15
	6.12 Default Provisions.....	15
	6.13 Remedies.....	15
	6.14 Replacement of Owner Representative.....	16
7.	Bid Awards	16
	7.1 Solicitations for Tier 1 and Tier 2-A Projects.....	16
	7.2 Competitive Solicitations.....	16
	7.3 Bidding Ties.....	17
8.	Solicitation for 2011 Compliance Year	18
	8.1 Resource Allocation.....	18
	8.2 Pricing	18

INDEX OF DEFINED TERMS

<i>Bidding Tie</i>	20	<i>Minimum Annual Quantity</i>	12
<i>Contract Maximum</i>	11	<i>MWh</i>	2
<i>Delaware Equipment Bonus</i>	3	<i>Owner</i>	5
<i>Delaware Workforce Bonus</i>	3	<i>Owner Representative</i>	6
<i>Delmarva</i>	3	<i>REC</i>	2
<i>DPSC</i>	1	<i>REPSA</i>	1
<i>Eligible Energy Resources</i>	1	<i>SEU</i>	3
<i>Estimated SREC Quantity</i>	9	<i>SREC</i>	2
<i>Execution Date</i>	10	<i>SREC Procurement Agent</i>	5
<i>GATS</i>	2	<i>SREC Procurement Pilot Program</i>	4
<i>Generation Unit</i>	1	<i>SREC Transfer Agreement</i>	8
<i>GEP</i>	6	<i>STC</i>	5
<i>Guaranteed On-Line Date</i>	14	<i>Taskforce</i>	3
<i>kW</i>	5		

APPENDICES

- Appendix A Form of Bid Application
- Appendix B Form of SREC Transfer Agreement

STATE OF DELAWARE
2013 PROGRAM
FOR THE PROCUREMENT OF
SOLAR RENEWABLE ENERGY CREDITS

1. Statutory Background

The Delaware Renewable Energy Portfolio Standards Act (as amended, “*REPSA*“) requires retail electricity suppliers operating in the State of Delaware to purchase energy from “*Eligible Energy Resources*“ to meet a portion of their retail load.¹ For the 2013 compliance year (beginning June 1, 2013), retail electricity suppliers must purchase at least 10% of their retail load in Delaware from renewable resources.² That requirement increases incrementally each subsequent compliance year, up to 25% for the 2025 compliance year. The cost of procuring renewable energy to satisfy the requirements of REPSA is passed through to customers.

REPSA was amended in 2007 to require that a certain portion of each retail electricity supplier’s renewable energy requirement be satisfied with energy from solar technologies. The 2010 amendments to REPSA established a solar set aside of 0.60% for the 2013 compliance year, which increases incrementally to 3.50% for the 2025 compliance year. For 2026 and future compliance years, the Delaware Public Service Commission (“*DPSC*“) will establish solar set-asides at levels at least equal to the 2025 set-aside.

To encourage the development of new renewable energy generation, REPSA mandates that no more than 1% of the renewable energy purchase requirement can be satisfied by purchases from renewable energy generation resources (each, a “*Generation Unit*“) that were in commercial operation prior to January 1, 1998. For the 2026 and subsequent compliance years, no such pre-existing Generation Units will be eligible to satisfy any portion of the REPSA requirement.

¹ Eligible Energy Resources are defined to include those that produce solar photovoltaic or solar thermal energy, wind energy, ocean energy, geothermal energy or energy from fuel cells powered by renewable fuels. Also included are biogas, small-scale hydroelectric, biomass and certain qualifying landfill gas recovery projects. Eligible Energy Resources do not include waste-to-energy facilities, incinerators or generating resources fueled by fossil-fuel waste products.

² RESPA was amended in Jul 2011 to provide: “[b]eginning with compliance year 2012, commission-regulated electric companies shall be responsible for procuring RECs, SRECs and any other attributes needed to comply with subsection (a) of this section with respect to all energy delivered to such companies’ end use customers.” 26 Del. C. §354(e) Accordingly, Delmarva Power is now responsible for RESPA compliance for its entire delivery load.

When it enacted REPSA, the Delaware General Assembly acknowledged that “the benefits of electricity from renewable energy resources accrue to the public at large, and that electric suppliers and consumers share an obligation to develop a minimum level of these resources in the electricity supply portfolio of the state.”³ It therefore directed the DPSC to “establish, maintain or participate in a market-based renewable energy tracking system to facilitate the creation and transfer of renewable energy credits among retail electricity suppliers.”⁴

2. Solar Renewable Energy Credits

2.1 General

To implement the mandate of REPSA, the DPSC adopted regulations that recognize the creation, and facilitate the tracking through PJM Interconnection’s Generation Attributes Tracking System (“*GATS*”), of renewable energy credits (each, a “*REC*”). A REC is a tradable instrument that represents the non-price characteristics (*e.g.*, fuel type, geographic location, emissions and vintage) of electric energy derived from an Eligible Energy Resource.⁵ One REC is equivalent to such characteristics associated with 1 megawatt-hour (“*MWh*”) of energy derived from such a resource. A solar renewable energy credit (an “*SREC*”) represents the same non-price characteristics of 1 MWh of energy derived from an Eligible Energy Resource that generates electric energy using solar photovoltaic technology.

RECs and SRECs are created upon the generation of electricity by an Eligible Energy Resource and the registration of such REC or SREC within GATS. Each owner of an Eligible Energy Resource is entitled to one REC or SREC, as applicable, for each MWh of energy generated by the resource. Such owners must therefore have an account within the GATS or have arranged with another entity that has such an account to act on its behalf.

2.2 Banking of SRECs

³ 26 Del. C. § 351(b). The benefits recognized by the General Assembly include “improved regional and local air quality, improved public health, increased electric supply diversity, increased protection against price volatility and supply disruption, improved transmission and distribution performance, and new economic development opportunities.” *Id.*

⁴ *Id.* § 359(a).

⁵ A REC does not include any emission reduction credits or allowances required to comply with any necessary permits for Generation Units.

Once a REC or SREC is created, it continues to exist for three years or until it is retired to satisfy the requirements of REPSA. Such three-year period is tolled during any period that a REC or SREC is held by the Delaware Sustainable Energy Utility (the “*SEU*”).

2.3 Bonus for Use of In-State Equipment or Workforce

Generation Units sited in Delaware are entitled to a 10% bonus on REC and SREC production if: (a) 50% or more of the cost of the renewable energy equipment comprising the Generation Unit (including mounting components) is manufactured in Delaware (the “*Delaware Equipment Bonus*”); or (b) the Generation Unit is constructed and/or installed either with a workforce at least 75% of whom are Delaware residents or by a company that employs at least 75% Delaware residents (the “*Delaware Workforce Bonus*”). Generation Units that meet both criteria are entitled to an aggregate 20% bonus. Satisfaction of these criteria must be certified by the DPSC.⁶

3. The Delaware Renewable Energy Taskforce

The 2010 amendments to REPSA established the Renewable Energy Taskforce (the “*Taskforce*”) to make “recommendations about the establishment of trading mechanisms and other structures to support the growth of renewable energy markets in Delaware.”⁷ The Taskforce was directed to find ways to increase deployment of solar generation and enhance the market for SRECs. Its responsibilities include making recommendations about the following:

- establishing a balanced market mechanism for REC and SREC trading;
- establishing REC and SREC aggregation mechanisms and other devices to encourage the deployment of solar energy technologies in Delaware with the least impact on retail electricity suppliers, municipal electric companies and rural electric cooperatives;
- minimizing the cost for complying with REPSA;

⁶ Eligibility for the Delaware Equipment Bonus and the Delaware Workforce Bonus shall be determined solely by the DPSC.

⁷ *Id.* § 360(d). The Taskforce is comprised of 11 members representing a broad cross-section of entities interested in and concerned with the implementation of renewable energy policy in Delaware. The 2010 amendment to REPSA stipulates that the Taskforce be made up of: (a) four appointments by the Secretary of the Delaware Department of Natural Resources and Environmental Control, including one from the renewable energy research and development industry, one from the local renewable energy manufacturing industry and one from an environmental advocacy organization; (b) one appointment by the DPSC; (c) one appointment by Delmarva Power & Light Company (“*Delmarva*”); (d) one appointment by the Delaware Electric Cooperative; (e) one appointment by municipal electric companies; (f) one appointment by the SEU; (g) one appointment by the Delaware Public Advocate; and (h) one appointment by the Delaware Solar Energy Coalition. *Id.* § 360(d)(1).

- establishing revenue certainty for appropriate investment in solar renewable energy technologies, including consideration of long-term contracts and auction mechanisms;
- establishing mechanisms to maximize in-state solar renewable energy generation and local manufacturing; and
- ensuring that residential, commercial and utility scale photovoltaic and solar thermal systems of various sizes are financially viable and cost-effective instruments in Delaware.

In 2010, the Taskforce appointed a special subcommittee to consider and make recommendations regarding the SREC procurement process. That subcommittee met on numerous occasions over several months and evaluated a variety of alternative approaches to SREC procurement in an effort to reach a consensus on a comprehensive program designed to meet the objectives set forth in REPSA with respect to the development of solar generation resources. Based on the subcommittee's work, the Taskforce recommended for approval to the DPSC a statewide pilot program for the 2011 compliance year (the "*SREC Procurement Pilot Program*") to encourage solar development in the State of Delaware while minimizing costs for owners, developers, aggregators, consumers and other participants in the SREC market in Delaware.

DPSC found that the proposed SREC Procurement Pilot Program, subject to certain changes relating to competitive bidding and GEP grants, adequately balanced the matters the Taskforce was instructed to address and was reasonable for a pilot program. (Final Findings, Opinion and Order in PSC Docket No. 11-399, DPSC Order No. 8093). In approving the proposal, DPSC stated that it would retain a consultant to conduct an independent review of the SREC Procurement Pilot Program to determine whether a long-term SREC contracting process should continue and, if so, to examine any associated issues, including but not limited to: (1) whether procurements should be by tiers, and if so, the number of tiers and cut-offs points between tiers; (2) whether there should be competitive bidding for all projects or all tiers; (3) whether administratively-set pricing should be used, if so, for which tier or tiers, and if so, the process by which pricing should be determined (including an assessment of the inputs and assumptions that go into the model by which administratively-set prices are developed); and (4) the effect of the SEU's involvement on the Pilot Program's administration and costs. Following DPSC's decision, Delmarva filed a modified SREC Procurement Pilot Program document reflecting the changes ordered by DPSC.

In April 2012, the SEU conducted the first round of the SREC Procurement Pilot Program and awarded twenty-year SREC contracts to 166 Delaware-sited systems totaling 7.68 MW of capacity. The solicitation was subscribed to by more than 23 MW of PV capacity from 548 individual systems.

Pursuant to Order No. 8093, DPSC retained a consultant to conduct an independent review of the SREC Procurement Pilot Program. The consultant found that the solicitation was well subscribed, with each of the program tiers oversubscribed by at least 2 to 1, and that the legislatively mandated bonuses for use of in-state equipment or workforce were very effective. Based upon feedback from subscribers as well as its own analysis, the consultant identified potential alterations to the program to reduce ratepayer impacts and create a more competitive solicitation. The consultant additionally identified that several system owners commented upon the necessity of owner representatives and their inability to represent themselves in the program.

The Taskforce considered the implementation of the SREC Procurement Pilot Program and the consultant's report and recommendations. Based upon its review, the Taskforce recommends the following SREC procurement program for the 2013 compliance year (the "2013 SREC Procurement Program").

4. **Program Administration; Eligibility**

4.1 **Public Solicitations**

The Taskforce believes that the procurement of SRECs by retail electricity suppliers operating in the State of Delaware should be implemented through public solicitations, managed by the SEU.⁸ Solicitations under the Pilot Program were managed by the SEU and the Taskforce has approved the use of the SEU for the Procurement Program.⁹ The solicitations will be for SRECs and other environmental attributes¹⁰ created by the Eligible Energy Resources, but will not cover the energy output of the resources. Upon receipt and

⁸ The SEU will use a third party (the "*SREC Procurement Agent*") to perform some or all of its duties with respect to the 2013 SREC Procurement Program, including conducting solicitations, evaluating bids and executing agreements on behalf of the SEU. As with the SREC Procurement Pilot Program, SRETrade will be the SREC Procurement Agent for the 2013 compliance year.

⁹ As with the Pilot Program, the recovery of costs incurred by the SEU will be dealt with in separate proceedings.

¹⁰ In addition to SRECs, environmental attributes include those attributes created from the Generation Unit's generation of electricity from solar energy in contrast with the generation of electricity using nuclear or fossil fuels or other traditional resources, such as emission credits, carbon credits, air quality credits, green credits, carbon tax credits, emissions reduction credits, greenhouse gas credits, certificates, tags, offsets, allowances and similar products, rights, claims or benefits, whether now existing or arising in the future. However, environmental attributes do not include tax credits other than carbon tax credits.

evaluation of the applications received in response to each solicitation, the SEU will award bids and execute agreements based on the criteria set forth in this 2013 SREC Procurement Program.

4.2 Owner Qualifications

To apply as an owner (an "*Owner*") of an Eligible Energy Resource pursuant to the 2013 SREC Procurement Program, the applicant must own, lease, control or be the direct assignee of all of the SRECs created by such resource.¹¹ Any party participating in the 2013 SREC Procurement Program may submit an application jointly with an entity that has executed agreements¹² to control the SRECs produced by two or more Eligible Energy Resources (such entity, an "*Owner Representative*").

An Owner that is qualified to submit an application on its own behalf may, at its option, elect to designate an Owner Representative. Affiliates of retail electricity suppliers are permitted to participate in the 2013 SREC Procurement Program as Owners or Owner Representatives (so long as they satisfy the applicable requirements for being an Owner or Owner Representative).

4.3 Eligible Projects

To qualify for participation in the 2013 SREC Procurement Program, a Generation Unit must: (a) qualify as a "Solar Photovoltaic Energy Resource" in accordance with the DPSC rules; and (b) be eligible for certification as an Eligible Energy Resource under REPSA.

In order to increase the likelihood that a wide variety of residential and commercial projects have an opportunity to participate in the 2013 SREC Procurement Program, the Taskforce has established distinct tiers of Generation Units (based on their date of interconnection approval and nameplate capacity) for which different pricing, bid rules and other contract terms and conditions will apply. The tiers are as follows:

¹¹ An Owner need not have been awarded SREC Transfer Agreements with respect to its Eligible Energy Resources.

¹² An Owner Representative need not have been awarded SREC Transfer Agreements with respect to its Eligible Energy Resources. It need only have executed agreements with Owners of two or more such resources.

GENERATION UNIT TIER DESIGNATIONS

<u>New Systems</u> ¹³	
<u>Tier</u>	<u>Nameplate Rating</u> (DC at STC)
N-1	Less than or equal to 30 kW
N-2	Greater than 30 kW but less than or equal to 200 kW ¹⁴
N-3	Greater than 200 kW but less than or equal to 2 MW
<u>Existing Systems</u> ¹⁵	
<u>Tier</u>	<u>Nameplate Rating</u> (DC at STC)
E-1	Less than or equal to 30 kW ¹⁶
E-2	Greater than 30 kW but less than or equal to 2 MW

The capacity of a Generation Unit and its applicable tier will be based on the aggregate nameplate rating of all solar arrays: (a) that are located on the same parcel of land (as established by the local taxing authority) or share a single utility interconnection point; and (b) for which applications are submitted for the same compliance year.¹⁷

4.4 Ongoing Program Evaluation

The Taskforce will evaluate the 2013 SREC Procurement Program on a periodic basis to consider whether any changes or modifications are necessary or advisable. Any changes or modifications to the program (e.g., the allocation of SRECs among the different tiers) would be prospective only and executed

¹³ Eligible “*New Systems*” are systems with final interconnection approval after the first date of the preceding auction process (i.e., April 2, 2012 for compliance year 2012).

¹⁴ 35% of the new systems procurement is reserved for Tier N-2. New systems procurement from Tier N-3 shall not exceed 35%.

¹⁵ Eligible “*Existing Systems*” are systems with final interconnection approval before the first date of the preceding auction process. New Systems and Existing Systems may be referred to individually as a “system” or collectively as “systems” throughout.

¹⁶ 50% of the existing systems procurement is reserved for Tier E-1. Existing systems procurement from Tier E-2 shall not exceed 50%.

¹⁷ An Owner may, at its discretion, include additional solar arrays at other locations, in which case the capacity of such arrays will be aggregated for purposes of determining the capacity and tier of such project.

SREC Transfer Agreements (as defined below) would not be affected. Any material changes to the 2013 SREC Procurement Program would be subject to approval by the appropriate regulatory bodies.

5. Bid Applications

5.1 General Requirements

Each Owner must submit, or designate its Owner Representative to submit, a completed bid application (and only one such bid application)¹⁸ for each Generation Unit for which it intends to participate in the 2013 SREC Procurement Program. However, for New Systems that are an addition to or expansion of Existing Systems, a separate application may be submitted for both the New System and the Existing System provided that the New System has a separate meter from the Existing System installed in accordance with the requirements of Section 6.7. The application (the form of which is appended hereto as Appendix A) must include:

- a description of the Generation Unit, including its location, the types of solar panels being used and its nameplate rating (at STC);¹⁹
- if the Owner elects to designate an Owner Representative, the identity of the Owner Representative; and
- designation of the GATS account (of the Owner or Owner Representative) into which the SRECs will be deposited.

In addition, each bid application must be accompanied by:

- the appropriate deposit; and
- an analysis of the estimated annual energy output using PVWatts Solar PV Energy Calculator or such other modeling technique as may be acceptable to the SEU.

Once an Owner's bid is accepted, it must submit:

- a standard form agreement (an "*SREC Transfer Agreement*") to sell SRECs to the SEU executed by the Owner and, if necessary or elected, an Owner Representative.

¹⁸ A Generation Unit may not be included in more than one bid application in any single solicitation. If such unit is not awarded an SREC Transfer Agreement as a result of such solicitation, the Owner is free to submit an application for such unit pursuant to any future solicitation.

¹⁹ The equipment description contained in the application is not binding on an Owner or an Owner Representative, provided that: (a) except as expressly permitted in accordance herewith, the nameplate rating (at STC) of any substitute equipment may not vary from that described in the original application by more than 5% for Tier 1 or Tier 2 projects, or 2.5% for Tier 3 projects; and (b) in no event will the substitution of different equipment affect the Estimated SREC Quantity contained in the original application.

5.2 Estimated Output

Each application to sell SRECs pursuant to the 2013 SREC Procurement Program must include a binding estimate of: (a) the annual energy output of the Eligible Energy Resource, as determined using PVWatts Solar PV Energy Calculator or such other modeling technique as may be acceptable to the SEU; and (b) the annual SREC production levels (such estimate of the SREC production levels, the "*Estimated SREC Quantity*"). The estimates for energy output and SREC production levels shall be subject to an annual degradation factor of 0.5%.

For Eligible Energy Resources claiming a bonus based on the use of Delaware-sourced equipment and/or an in-state workforce (as described in Section 2.3 above), the application must include a statement that it intends to qualify for the Delaware-sourced equipment and/or in-state workforce bonus and the binding SREC output estimate for such resources should include any such SREC bonus.²⁰ Failure to claim a bonus at the time an application is submitted will disqualify a project from being entitled to the bonus, regardless of whether Delaware-sourced equipment or an in-state workforce is later employed.

5.3 Bid Deposit

Each application to participate in the 2013 SREC Procurement Program must be accompanied by a bid deposit in an amount equal to \$100 per kW (DC) of the nameplate rating (at STC) of the Eligible Energy Resource; provided that the bid deposit will be waived for qualifying projects that provide a copy of their DPSC certification as an Eligible Energy Resource along with their bid application. All bid deposits must be in the form of an acceptable letter of credit, cash or a bid bond²¹ and will be held by the SEU on behalf of the participating retail electricity suppliers.

The bid deposits will be returned or released promptly upon: (a) rejection of an application; or (b) termination of an SREC Transfer Agreement based on the imposition by the interconnecting utility of a charge

²⁰ The "bonus" SRECs are not actually credited to retail electricity suppliers until they retire the SRECs to which the bonus applies. However, under the terms of the SREC Transfer Agreements, as long as the Owner provides evidence that the DPSC has certified that the Eligible Energy Resource qualifies for the bonus, payment for the SRECs will include the bonus amount.

²¹ A bid bond must be in the form of American Institute of Architects (AIA) Form 310. In addition, any applicant that provides a bid bond as bid security will be required to replace such bond with a deposit in the form of a letter of credit or cash no later than 10 days after the SEU provides notice that its bid application has been granted.

other than a standard interconnection fee (as described in Section 6.4 below). In addition, if an Owner claims in its application that a project will be entitled to the Delaware Equipment Bonus or the Delaware Workforce Bonus and such project is not certified by the DPSC as being eligible for either such "claimed" bonus, the bid deposit will be forfeited and the SREC Transfer Agreement will be terminated. Otherwise, the bid deposit will be returned upon completion and commencement of operation of the Generation Unit on or prior to the Guaranteed On-Line Date (as defined in Section 6.5 below) and the posting of performance credit support (as described in Section 6.9 below). For Generation Units that commence operation after such date, the bid deposit will be used to pay delay liquidated damages (as described in Section 6.5 below) and the balance, if any, will be returned to the Owner promptly after the commencement of operation and the posting of performance credit support (as described in Section 6.9 below). Cash deposits will not earn interest.

6. **SREC Transfer Agreements**

In order to minimize transaction costs, the SEU will enter into standard form SREC Transfer Agreements with Owners and, if elected by such Owners, the Owner Representatives. The SEU will countersign each SREC Transfer Agreement promptly upon determining that the associated application and bid qualify for selection pursuant to the pending solicitation (the date of signing by the SEU, the "*Execution Date*"). Each SREC Transfer Agreement will include:

- the Owner's agreement to maintain the Generation Unit as an Eligible Energy Resource;
- an acknowledgment by the Owner and, if applicable, the Owner Representative that: (a) the SEU and retail electricity suppliers have the right to inspect the Generation Unit (which right may be assigned to qualified third parties); and (b) the SEU has the right to resell the SRECs in any market where they are eligible to be traded, including states other than Delaware; and
- if the Owner is designating an Owner Representative, the appointment of the Owner Representative as the Owner's exclusive agent to manage SRECs within GATS on the Owner's behalf.

The form of the SREC Transfer Agreement is appended hereto as Appendix B. Some of the principal terms and conditions of the SREC Transfer Agreement are described in this Section 6.

6.1 Term of Agreement

All SREC Transfer Agreements will have a term of 20 years. The term will commence as of the later of June 1, 2013 or the first day of the month following the date as of which the Generation Unit is certified as an Eligible Energy Resource by the DPSC.

6.2 SREC Quantity

Pursuant to each SREC Transfer Agreement, the Owner and, if applicable, the Owner Representative will be obligated to transfer (by registering within GATS) and sell to the SEU, and the SEU will be obligated to purchase and pay for, all of the SRECs produced at the Generation Unit up to the Contract Maximum (as defined below). To facilitate more efficient management and accounting for SREC procurement, and to maximize opportunities for the largest possible group of Owners to participate in the 2013 SREC Procurement Program, the quantity of SRECs that may be delivered pursuant to any SREC Transfer Agreement during any annual period will be limited to 110% of the Estimated SREC Quantity for such period (such amount, the "*Contract Maximum*"). All SRECs delivered pursuant to an SREC Transfer Agreement must be created based on the output of the Generation Unit that is the subject of that agreement. In the event a Tier N-1, Tier N-2 or Tier E-1 project produces SRECs in excess of the Contract Maximum, the SEU will have the option to elect whether or not to purchase any or all of the surplus SRECs. If it exercises that option, the sale of any such excess SRECs will be subject to the same terms, conditions and pricing applicable to other SREC purchases under the SREC Transfer Agreement. In the event a Tier N-3 or Tier E-2 project produces SRECs in excess of the Contract Maximum, or if the SEU declines to purchase, or purchases only a portion of, the excess SRECs produced by a Tier N-1, Tier N-2 or Tier E-1 project, the SEU will transfer any such excess SRECs back to the Owner, who will have the right to sell such excess SRECs in any manner it deems appropriate.

For Tier N-3 and Tier E-2 projects that have a nameplate rating of 500 kW or greater, the Owner and, if applicable, the Owner Representative will be obligated to sell to the SEU, for each annual period, a quantity of SRECs equal to no less than 80% of the Estimated SREC Quantity for such period (the "*Minimum Annual Quantity*").

The Estimated SREC Quantity may not be amended unless the Owner reduces the capacity of a Generation Unit either to avoid or minimize any interconnection fees or charges sought to be imposed by the interconnecting utility (as described in Section 6.4) or to allow the Generation Unit to fit within a pending solicitation (as described in Sections 7.1 and 7.2).

6.3 Pricing

All New Systems and Existing Systems will be required to submit bids which will be evaluated and selected based on the lowest bid prices. Owners are required to submit bids only in their applicable Tier. For the 2013 SREC Procurement Program, the SREC price during the first 7 years of the term of the SREC Transfer Agreements will be the bid price, and the SREC price for the final 13 years of the SREC Transfer Agreements will be fixed at \$50 per SREC.

6.4 Utility Interconnections

If, based on an Owner's interconnection application, the interconnecting utility proposes to assess any fee or charge (other than a standard interconnection application fee), the Owner may, within 10 days of notice of such fee or charge by the interconnecting utility, either reduce the capacity of the Generation Unit to avoid or minimize such fee or charge or terminate the SREC Transfer Agreement. In order to take advantage of this right, each Owner must submit a complete interconnection application (Step 1) to the interconnecting utility no later than 120 days after the Execution Date.

If an Owner reduces the capacity of a Generation Unit to avoid or minimize an interconnection charge, the Estimated SREC Quantity will be reduced by the same percentage and any excess deposit will be returned to the Owner.²² If an Owner elects to terminate the SREC Transfer Agreement based on the imposition of an interconnection fee or charge, the entire deposit will be returned.

6.5 Guaranteed On-Line Date; Delay Liquidated Damages

All projects must commence operation no later than 12 months after the Execution Date (the "*Guaranteed On-Line Date*"); provided that the Guaranteed On-Line Date will be subject to extension to the

²² A reduction in capacity to avoid or minimize an interconnection charge will not affect pricing under the SREC Transfer Agreement, regardless of whether the reduced capacity would have qualified the project to submit an application for a lower tier.

extent reasonably necessary based on: (a) events beyond the reasonable control of the Owner (*i.e.*, force majeure as defined in the SREC Transfer Agreement); or (b) the failure by the interconnecting utility to complete the interconnection (provided that the Owner or, if applicable, the Owner Representative shall have submitted a timely and complete interconnection application to the interconnecting utility). In no event will the Guaranteed On-Line Date be extended for more than one additional year.

For any Generation Unit that fails to meet its Guaranteed On-Line Date, the Owner and, if applicable, the Owner Representative will be liable to pay liquidated damages for each full or partial day of delay. The amount of such damages will be equal to 1/30th of the deposit amount. In the event a Generation Unit is not operational within 30 days of its Guaranteed On-Line Date, the SEU will have the right to terminate the SREC Transfer Agreement.

6.6 Payment

All Tier N-1, N-2 and E-1 projects will be paid on a quarterly basis, and all other projects will be paid on a monthly basis. Each Owner will stipulate in the SREC Transfer Agreement whether payment is to be made to the Owner or, if applicable, the Owner Representative. Payment will be based on the number of SRECs transferred to and registered in the SEU's GATS account during the relevant billing period.

6.7 Metering

All Tier N-1, N-2, E-1 and E-2 Projects must install either a revenue-grade meter on site or revenue-grade online monitoring. All Tier N-3 Projects must install revenue-grade online monitoring.

6.8 Conditions Precedent

The SEU's purchase obligations under each SREC Transfer Agreement will be conditioned on: (a) the Owner providing evidence that it has received a certification number from the DPSC confirming that the referenced Generation Unit qualifies as an Eligible Energy Resource; and (b) for Generation Units that are eligible in accordance with GATS rules and procedures, the Owner executing a standing order directing that all SRECs generated by such unit (up to the Contract Maximum) be transferred to the SEU's GATS account. For projects claiming a bonus based on the use of Delaware-sourced equipment or an in-state workforce (as described in Section 2.3 above), the SEU's obligations will also be subject to delivery of confirmation from

the DPSC that the resource qualifies for the claimed bonus (which confirmation may be delivered within 30 days of the commencement of operation of the resource).

6.9 Performance Credit Support

Pursuant to the terms of each SREC Transfer Agreement, the Owner and, if applicable, the Owner Representative, will grant the SEU a security interest in all of the SRECs (up to the Contract Maximum) generated by the project to secure their respective obligations under the agreements, including the obligation to deliver and sell the SREC output of the project.

To secure their obligations to deliver the Minimum Annual Quantity, Owners or Owner Representatives of Tier N-3 or Tier E-2 projects with a nameplate rating of 500 kW or greater will also be required to provide supplemental credit support in the form of cash, a letter of credit or other collateral acceptable to the SEU. For each of the first 7 years of the SREC Transfer Agreement, such supplemental credit support shall be in an amount equal to 5% of the value (at the applicable price set forth in the SREC Transfer Agreement) of the first-year Estimated SREC Quantity; for each year thereafter, it shall be in an amount equal to 10% of the value of the Estimated SREC Quantity for the 8th year of the agreement. The supplemental credit support must be replenished to the required level in the event any portion of the credit support is drawn or used.

6.10 Project Maintenance; Inspections

Owners and, if applicable, Owner Representatives will be responsible for maintaining Generation Units so that they remain Eligible Energy Resources and are able to produce their respective Estimated SREC Quantities. Owners and Owner Representatives must notify the SEU of any substantive changes to the operational characteristics of the Generation Unit.²³

The SEU will have the right to physically inspect Generation Units to verify compliance with the terms of their applicable SREC Transfer Agreements. The SEU may delegate that right to the SREC Procurement Agent, any retail electricity suppliers or any other qualified third parties.

²³ Owners and Owner Representatives are also required to provide the SEU with copies of any notice(s) submitted to the DPSC pursuant to 26 Del. C. § 3008(3.1.8) and any additional correspondence related to such notice(s).

6.11 Excused Performance

Owners will be excused from any delay in performance or failure to perform under an SREC Transfer Agreement caused by conditions beyond their reasonable control (*i.e.*, force majeure as defined in the SREC Transfer Agreement); provided that such relief shall be limited to the amount of time the condition exists that caused the delay but in no event greater than a period of one year for any single force majeure event.

6.12 Default Provisions

Pursuant to the SREC Transfer Agreement, the Owner and, if applicable, the Owner Representative will be in default if:

- the full SREC output of a Generation Unit (up to the Contact Maximum) is not made available to the SEU within the timeframe required ;
- for a Tier N-3 or Tier E-2 project with a nameplate rating of 500 kW or greater, the project fails to generate the Minimum Annual Quantity during any annual period and the Owner fails to pay applicable damages (as described in Section 6.13 below) within 30 days after the end of such annual period; or
- required credit support is not maintained.

In addition, an Owner Representative will be in default under an SREC Transfer Agreement if it fails to qualify as an Owner Representative under the terms of the 2013 SREC Procurement Program and such failure is not cured within 30 days of notice of such failure.

6.13 Remedies

Upon a breach or default by an Owner or an Owner Representative under an SREC Transfer Agreement, the SEU will be entitled to all of its remedies at law and in equity, including specific performance of and/or termination of the agreement. Upon a breach or default by the SEU under an SREC Transfer Agreement, the Owner and, if applicable, the Owner Representative, will be entitled to their respective remedies at law and in equity. Equitable remedies will include specific performance of such agreement.

In the event the SEU terminates an SREC Transfer Agreement based on a failure or refusal to sell the SREC output of the Eligible Energy Resource to the SEU, the SEU may recover damages calculated based on

the difference, if positive, between the price for SRECs under the SREC Transfer Agreement and the cost to replace such SRECs in the market.

If a Tier N-3 or Tier E-2 project with a nameplate rating of 500 kW or greater fails to produce the Minimum Annual Quantity of SRECs during any annual period, the Owner will owe damages equal to the amount of the shortfall, multiplied by the difference, if positive, between: (a) the lower of the prevailing market price of SRECs (as reasonably determined by the SEU) or the amount of the "Alternative Compliance Payment" (as defined in REPSA) for the year in which such shortfall occurs; and (b) the price for SRECs under the SREC Transfer Agreement. Such damages shall be due and payable no later than 30 days after the end of the annual period to which they apply. Payment of such damages will be the Owner's sole liability for the failure to deliver the Minimum Annual Quantity.

6.14 Replacement of Owner Representative

An Owner may remove its Owner Representative at any time and for any reason (or no reason) in its sole and absolute discretion.

7. Bid Awards

Promptly upon receipt of an application to sell SRECs from an Owner Representative or Owner in response to a solicitation issued pursuant to the 2013 SREC Procurement Program, the SEU will review the application to verify whether it is complete and complies with applicable procedures. Partial or incomplete applications will be rejected.

7.1 Competitive Solicitations

All projects will be required to submit price bids in competitive solicitations. A given system is only allowed to bid into one auction and one tier per year.

The price bid for each project must be for a fixed dollar amount, which amount cannot escalate or otherwise vary during the initial 7-year period of the term. The SEU will award SREC Transfer Agreements to such projects with the lowest price bids in each solicitation. The SEU may select an Owner in any lower Tier (i.e. N-2 or E-1) to fill the requirements of any higher Tier (i.e. N-3 or E-2) subject to certain limitations. For Tier N-1, 30% of the total procurement must be awarded to Owners submitting bids in Tier N-1. For Tier

N-2, at least 35% of the total procurement must be awarded to Owners submitting bids in Tier N-2. For Tier E-1 at least 50% of the total procurement must be awarded to Owners submitting bids in E-1. Provided these stated minimums are met, the SEU will accept for each Tier the lowest bid prices.

If a tier allocation is not fully subscribed in the initial solicitation, a second solicitation may be held within the following six months for the balance of the allocation for such tier. The SEU will announce all solicitations for competitively priced bids at least 30 days in advance of the bid date.

7.2 Bidding Ties

If there are multiple bids at the same price that would cause a competitive solicitation to be oversubscribed (a "*Bidding Tie*"), the SEU will give each applicant involved in the Bidding Tie for such tier a 5-day period to reduce its price bid and will then evaluate any revised bids submitted by the applicants involved in such Bidding Tie. The SEU will then award one or more SREC Transfer Agreements to some or all of the applicants involved in such Bidding Tie as follows:

- first, if any such applicant submits a reduced price bid, to such applicant(s) on the basis of the lowest price bid until: (a) the pending solicitation is fully subscribed or only a *de minimis* portion of such solicitation (as determined by the participating retail electricity suppliers) remains unsubscribed; (b) the next highest price bid would cause the pending solicitation to be oversubscribed; or (c) there is a Bidding Tie with respect to the remaining bids; and
- second, if after completion of the first step, the pending solicitation is not fully subscribed and there is a Bidding Tie with respect to the remaining bids, the SEU will award SREC Transfer Agreements based on a lottery among the remaining applicants involved in such Bidding Tie that claimed the Delaware Equipment Bonus and the Delaware Workforce Bonus;

If a project selected based on bid price or by lottery would cause the pending solicitation to be oversubscribed, the SEU will give the applicant the option to reduce the capacity of the Generation Unit to the remaining balance of the pending solicitation. If the applicant elects not to reduce the capacity of the Generation Unit, its bid application will be rejected and the solicitation will continue until the pending solicitation is fully subscribed or only a *de minimis* portion of the solicitation (as determined by the participating retail electricity suppliers) remains unsubscribed. If the applicant elects to reduce the capacity of the Generation Unit so that it fits within a pending solicitation, the Estimated SREC Quantity will be reduced by an equal percentage. In addition, if such reduction qualifies the project for a lower tier, the original form of

SREC Transfer Agreement will be terminated and replaced with the form of agreement applicable to the lower tier. In such case, the reduced capacity of the Generation Unit will be reallocated from the tier originally bid to such lower tier and any excess deposit will be returned to the Owner.

Partial fill systems will be allowed to bid the rest of the system in future procurements, but the second bid will have to be in a tier size that reflects the cumulative system size. Systems that obtain multiple bids will first transfer SRECs at the lowest price each year.

For system additions, the bid must be in a tier size that reflects the cumulative system size. Systems that obtain multiple bids will first transfer SRECs at the lowest price each year.

8. Solicitation for 2013 Compliance Year

8.1 Resource Allocation

Based on forecasted load, the SREC solicitations for the 2013 compliance year will be for 8,000 SRECs, which will be allocated as follows:

New Systems - 4,000 SRECs

- Tier N-1 – 1,200 SRECs
- Tier N-2 – 1,400 SRECs
- Tier N-3 – 1,400 SRECs

Existing Systems - 3,000 SRECs

- Tier E-1 – 1,500 SRECs
- Tier E-2 – 1,500 SRECs

Spot Market Purchases - 1,000 SRECs

Delmarva Power may procure a portion of its requirement, approximately 1,000 SRECs, through the spot market. The size of the spot market purchases should be consistent with a portfolio approach of short term and long term purchases. The spot market procurement will be open to all systems, and Delmarva Power will procure short-term contracts in a similar manner to its current practices.

<u>SEU Use Only</u>	
Application Number:	_____
Bid Date:	_____
Intake Personnel:	_____
Application Complete:	Yes/No

APPENDIX A
Form of Bid Application

APPLICATION
to sell
SOLAR RENEWABLE ENERGY CREDITS
2013 SREC PROCUREMENT PROGRAM

This is an application to sell solar renewable energy credits ("SRECs") to the Delaware Sustainable Energy Utility, Inc. (the "SEU") pursuant to a procurement program for the 2013 compliance year established in accordance with the Delaware Renewable Energy Portfolio Standards Act (as amended, "REPSA").

Owner Information¹

Name (company or individual): _____

Street address: _____

City, state and zip code: _____

Email address: _____

GATS Account No.:² _____

Other Eligible Energy Resources
owned by Owner:³ _____

Owner Representative Information (to be filled in if applicable)

Name (company or individual): _____

Street address: _____

City, state and zip code: _____

Email address: _____

GATS Account No.: _____

Other Eligible Energy Resources
owned by Owner Representative: _____

¹ The designated Owner must be the legal entity that owns, leases, controls or is the direct assignee of all of the SRECs created by the Project described in this Application.

² Not required if an Owner Representative is designated or if construction of Project is not complete.

³ Not required if an Owner Representative is designated.

Description of Project

Location: _____
(street address or parcel number)

City, state and zip code: _____

Nameplate capacity (kW-DC)⁴ _____

Tier designation (check one):

- Tier N-1 Project (New system, less than or equal to 30 kW-DC)
- Tier N-2 Project (New system, greater than 30 kW and less than or equal to 200 kW-DC)
- Tier N-3 Project (New system, greater than 200 kW and less than or equal to 2,000 kW-DC)
- Tier E-1 Project (Existing system, less than or equal to 30 kW-DC)
- Tier E-2 Project (Existing system, greater than 30 kW and less than or equal to 2,000 kW-DC)

Module type (make and model): _____

Inverter type (make and model): _____

System tilt (degrees): _____

System azimuth (degrees): _____

Mounting location (specify one):

- Ground
- Rooftop

Operational status (check one):

- Project currently under development
- Project currently in operation
Specify initial operation date: _____

Estimated energy and SREC output:

First-year energy output: _____ kWh (exclusive of any bonuses described below)

First-year SREC output: _____ SRECs (exclusive of any bonuses described below)

Utility interconnection:

_____ Interconnecting Utility

_____ Date of acceptance of completed System Interconnection Application

⁴ At standard test conditions (internal cell temperature of 25°C and irradiance of 1,000 watts per square meter with air mass 1.5 spectrum).

Required Information

Supplemental funding from public sources⁵ (provide information for any funding applied for, awarded and/or received):

- Delaware Green Energy Program Grant

Application Date: _____
Utility: _____
Award Date: _____
Amount: _____

- Other public supplemental funding (provide additional sheet if necessary)

Source: _____
Application Date: _____
Award Date: _____
Amount: _____

Eligibility for Delaware Equipment Bonus (check if applicable):

- The Project is sited in the State of Delaware and a minimum of 50% of the total cost of renewable energy equipment, inclusive of mounting components, is manufactured in Delaware⁶

Eligibility for Delaware Workforce Bonus (check if applicable):

- The Project is sited in the State of Delaware and is or will be constructed and/or installed either with a workforce at least 75% of whom are Delaware residents or by a company that employs at least 75% Delaware residents⁷

Price Bid: \$ _____ per SREC (applicable during first 7 years)

THE UNDERSIGNED HEREBY CERTIFIES THAT: (A) IT IS THE OWNER IDENTIFIED HEREIN; (B) THIS IS THE ONLY APPLICATION BEING SUBMITTED PURSUANT TO THE 2013 SREC PROCUREMENT PROGRAM THAT INCLUDES THE PROJECT DESCRIBED HEREIN; (C) THE INFORMATION SET FORTH IN THIS APPLICATION IS TRUE, ACCURATE AND COMPLETE; AND (D) IT HAS FULLY, COMPLETELY AND ACCURATELY IDENTIFIED ALL SUPPLEMENTAL FUNDING FROM PUBLIC SOURCES (OTHER THAN GRANTS IN LIEU OF INVESTMENT TAX CREDITS) FOR WHICH IT HAS APPLIED OR WHICH IT HAS BEEN AWARDED OR RECEIVED.

Owner

Print: _____

Attachments

Completed SREC Transfer Agreement executed by Owner and, if applicable, Owner Representative

Deposit in the amount of \$100/kW of the nameplate rating of the Project

Calculation of the estimated first-year energy output using PVWatts Solar PV Energy Calculator or other modeling technique acceptable to the SEU (using actual tilt and orientation)

⁵ Excluding any grants in lieu of investment tax credits.

⁶ Eligibility for the Delaware Equipment Bonus shall be determined solely by the DPSC.

⁷ Eligibility for the Delaware Workforce Bonus shall be determined solely by the DPSC.

APPENDIX B

Form of SREC Transfer Agreement

SOLAR RENEWABLE ENERGY CREDIT

TRANSFER AGREEMENT

DELAWARE RENEWABLE ENERGY PORTFOLIO STANDARDS ACT

2013 SREC PROCUREMENT PROGRAM

**SOLAR RENEWABLE ENERGY CREDIT TRANSFER AGREEMENT
DELAWARE RENEWABLE ENERGY PROGRAM**

2013 SREC PROCUREMENT PROGRAM

TABLE OF CONTENTS

PART I PROJECT AND OWNER INFORMATION.....	1
PART II TERMS AND CONDITIONS	4
Section 2.1 <u>Purchase and Sale of SRECs.</u>	4
Section 2.2 <u>Operational Matters.</u>	5
Section 2.3 <u>Conditions.</u>	7
Section 2.4 <u>Purchase Price and Payment Terms.</u>	7
Section 2.5 <u>Completion Guarantee.</u>	8
Section 2.6 <u>Representations, Warranties and Acknowledgements.</u>	9
Section 2.7 <u>Change in Estimated SREC Quantity.</u>	11
Section 2.8 <u>Default And Remedies.</u>	11
Section 2.9 <u>Force Majeure.</u>	13
PART III OWNER REPRESENTATIVE	14
Section 3.1 <u>Agency Appointment.</u>	14
Section 3.2 <u>Agency Responsibility.</u>	14
Section 3.3 <u>Termination or Replacement of Owner Representative.</u>	14
Section 3.4 <u>Representations and Warranties of Owner Representative.</u>	15
Section 3.5 <u>Continuing Eligibility.</u>	16
PART IV MINIMUM ANNUAL QUANTITY	16
Section 4.1 <u>Guaranteed Quantity.</u>	16
Section 4.2 <u>Supplemental Credit Support.</u>	17
PART V CREDIT SUPPORT	17
Section 5.1 <u>Bid Deposit.</u>	17
Section 5.2 <u>Security Interest.</u>	18
PART VI DEFINITIONS; RULES OF CONSTRUCTION	19
Section 6.1 <u>Definitions.</u>	19
Section 6.2 <u>Rules of Construction</u>	23
PART VII GENERAL PROVISIONS.....	24
Section 7.1 <u>Notices</u>	24
Section 7.2 <u>Governing Law</u>	24
Section 7.3 <u>Dispute Resolution</u>	24
Section 7.4 <u>Jurisdiction and Venue</u>	24
Section 7.5 <u>Service of Process</u>	25
Section 7.6 <u>Waiver of Right to Jury Trial</u>	25
Section 7.7 <u>Records</u>	25
Section 7.8 <u>Assignment.</u>	25
Section 7.9 <u>Delay and Waiver</u>	26
Section 7.10 <u>Relationship of the Parties</u>	26
Section 7.11 <u>Survival of Obligations</u>	26
Section 7.12 <u>Severability</u>	26
Section 7.13 <u>Entire Agreement</u>	26
Section 7.14 <u>Amendments</u>	26

Section 7.15	<u>Headings</u>	26
Section 7.16	<u>Counterparts</u>	26

**SOLAR RENEWABLE ENERGY CREDIT TRANSFER AGREEMENT
DELAWARE RENEWABLE ENERGY PROGRAM**

2013 SREC PROCUREMENT PROGRAM

This Agreement, made this ____ day of _____, _____, pertains to the sale and transfer by the Owner (as identified below) of solar renewable energy credits created by a solar power project (as described in more detail below, the "**Project**")¹ to SEU One, LLC (or any successor organization thereto, the "**SEU**").

**PART I
PROJECT AND OWNER INFORMATION**

A. Owner:²

- Name of entity: _____
- Street address: _____
- City, state and zip code: _____
- Attention: _____
- Email address: _____
- Tax ID number: _____
- Owner's other Eligible Energy Resources:³ _____
- Owner GATS Account No.:⁴ _____

B. Owner Representative (if one is designated):

- Name of entity: _____
- Street address: _____
- City, state and zip code: _____

¹ A Project may be located at multiple locations, provided that the same legal entity owns, leases, controls or is the direct assignee of all of the SRECs created by the entire Project.

² The Owner is the legal entity that owns, leases, controls or is the direct assignee of all of the SRECs created by the Project.

³ Required only if: (a) the Project has a nameplate capacity of less than 100 kW; and (b) no Owner Representative is designated.

⁴ If the Owner has not established a GATS account as of the Bid Date, it must provide the SEU with such account number promptly after the account is established.

- Attention: _____
- Email address: _____
- Tax ID number: _____
- Other Eligible Energy Resources: _____

C. Payee (check one):

- Owner
- Owner Representative

D. Project:

- Street address:⁵ _____
(or parcel number if property does not have street address)
- City, state and zip code: _____
- Nameplate capacity: _____ kW⁶
- Tier designation (check one):
 - Tier N-1 Project (New system, less than or equal to 30 kW-DC)
 - Tier N-2 Project (New system, greater than 30 kW and less than or equal to 200 kW-DC)
 - Tier N-3 Project (New system, greater than 200 kW and less than or equal to 2,000 kW-DC)
 - Tier E-1 Project (Existing system, less than or equal to 30 kW-DC)
 - Tier E-2 Project (Existing system, greater than 30 kW and less than or equal to 2,000 kW-DC)
- Operational status (check one):
 - Project under development as of Bid Date

⁵ If the Project is located at multiple locations, the street address or parcel number for each location must be provided. A separate page may be attached if necessary.

⁶ All capacity (kW) references are to the nameplate rating of the Generation Unit (DC at STC), as designated by the solar module manufacturer.

- Operation Date has occurred as of Bid Date
Operation Date: _____
- Commencement Date (check one):
 - June 1, _____
 - First day of the month following Execution Date
- Utility interconnection:
_____ Interconnecting Utility
- Supplemental funding from public sources (check if applicable):⁷
 - Delaware Green Energy Program Grant
Utility _____
Amount: _____
 - Other grants from public sources (excluding grants in lieu of investment tax credits)
Amount and type: _____
Source: _____
- SREC credits (check if applicable):
 - The Project qualifies for a 10% credit on SREC output (if applicable, the "***Delaware Equipment Bonus***") because the Project is sited in the State of Delaware and a minimum of 50% of the cost of renewable energy equipment, inclusive of mounting components, is manufactured in Delaware.
 - The Project qualifies for a 10% credit on SREC output (if applicable, the "***Delaware Workforce Bonus***") because the Project is sited in the State of Delaware and is or will be constructed and/or installed either with a workforce at least 75% of whom are Delaware residents or by a company that employs at least 75% Delaware residents.
- Energy and SREC output
Estimated first-year total energy output: _____ kWh (exclusive of any bonuses described below)⁸

⁷ If the Project has received a Delaware Green Energy Program Grant, the Owner shall deliver a copy of the grant award simultaneously with this Agreement.

⁸ An analysis of the estimated first-year energy output using PVWatts Solar PV Energy Calculator or other modeling technique acceptable to the SEU is attached as Exhibit A hereto.

Estimated first-year total SREC output _____ SRECs (exclusive of any bonuses described below)

Delaware Equipment Bonus: _____ SRECs
(10% of total SREC output, if applicable)

Delaware Workforce Bonus: _____ SRECs
(10% of total SREC output, if applicable)

Estimated SREC Quantity (first-year): _____ SRECs

E. Bid information:

- Date of receipt of Owner's application: _____
[To be filled in by the SEU]
- Bid Price: \$ _____ / SREC (for first 7 Contract Years)

PART II
TERMS AND CONDITIONS

Section 2.1 Purchase and Sale of SRECs.

2.1.1 Sale. The Owner agrees to sell and deliver to the SEU all SRECs created by the Project (the "**Project SRECs**"), up to the Maximum Annual Quantity. The sale and delivery of SRECs pursuant to this Agreement shall be deemed to occur in the State of Delaware. The Owner acknowledges and agrees that the SEU intends to resell the Project SRECs to retail electric suppliers in Delaware.

2.1.2 Excess SRECs.

- (a) If a Tier N-1 or N-2 Project or a Tier E-1 Project creates any Excess Amount during any Contract Year, the SEU shall, no later than 30 days after the end of such Contract Year, notify the Owner whether or not it will purchase all or any portion of such Excess Amount. Failure by the SEU to notify the Owner of such election within such time period shall be deemed an election by the SEU to not purchase the Excess Amount or any portion thereof for such Contract Year. In the event that the SEU does not purchase any portion of the Excess Amount created by a Tier N-1 or N-2 Project or a Tier E-1 Project for any Contract Year and such SRECs were transferred to the GATS account of the SEU, the SEU shall promptly re-transfer such SRECs to the GATS account of the Owner or, if one is designated, the Owner Representative.
- (b) If a Tier N-3 Project or Tier E-2 Project creates any Excess Amount during any Contract Year: (a) the SEU shall have no right to purchase any

such Excess Amount; (b) the Owner shall be free to use or sell such SRECs as it deems appropriate; and (c) if any such SRECs were transferred to the GATS account of the SEU, the SEU shall promptly re-transfer such SRECs to the GATS account of the Owner or, if one is designated, the Owner Representative.

2.1.3 GATS Registration. The Owner or, if one is designated, the Owner Representative, shall be responsible for transferring the Project SRECs to the SEU by registering such SRECs in the GATS account of the SEU. If PJM will accept an irrevocable standing order from the Owner directing that all Project SRECs be transferred automatically to the GATS account of the SEU, the Owner shall execute such an order, in a form acceptable to the SEU. If PJM will not accept an irrevocable standing order from the Owner, but will accept a revocable standing order directing that all Project SRECs be transferred automatically to the GATS account of the SEU, the Owner shall execute such an order, in a form acceptable to the SEU.

2.1.4 Term of Purchase.

- (a) If the Operation Date of the Project did not occur prior to the Bid Date, the SEU's obligation to purchase SRECs shall commence as of the later of June 1, 2013, or the first day of the month after the Project is certified as an Eligible Energy Resource by the DPSC.
- (b) If the Operation Date of the Project occurred prior to the Bid Date, the SEU's obligation to purchase SRECs shall commence as of June 1, 2013.
- (c) The SEU's obligation to purchase SRECs shall continue for a period of 20 years after the Commencement Date.

2.1.5 Project SRECs. The Owner shall not be entitled to transfer or sell any SRECs other than Project SRECs pursuant to this Agreement. All Project SRECs shall be free and clear of any liens, taxes, claims, security interests or other encumbrances other than as provided for in Section 5.2.

Section 2.2 Operational Matters.

2.2.1 Interconnection.

- (a) The Owner shall be solely responsible for interconnecting the Project to the electric transmission or distribution system of the Interconnecting Utility. In order to invoke its rights under this Section 2.2.1 (b)-(d) the Owner shall submit a complete interconnection application (Step 1) to the Interconnecting Utility no later than 120 days after the Execution Date.
- (b) If the Interconnecting Utility notifies the Owner that there will be a fee or charge (other than a standard interconnection application fee) required to interconnect the Project, the Owner may, within 10 days of such notice,

elect to: (i) reduce the capacity of the Project to avoid or minimize such fee or charge; or (ii) terminate this Agreement.

- (c) If the Owner elects to reduce the capacity of the Project pursuant to Section 2.2.1(b), it shall provide the SEU with written notice specifying the reduced nameplate capacity of the Project and upon such election, the Estimated SREC Quantity (first year) shall be deemed to be reduced by the same percentage as the reduction in the nameplate capacity. Promptly upon receipt of such election, the SEU shall return or release any excess Bid Deposit to the Owner.
- (d) If the Owner elects to terminate this Agreement pursuant to Section 2.2.1(b), it shall provide the SEU with written notice of termination and promptly upon receipt of such election, the SEU shall return or release the entire Bid Deposit to the Owner.

2.2.2 Project Development. Unless the Project is operational as of the Execution Date, the Owner shall exercise all commercially reasonable efforts to complete construction of the Project, including obtaining all approvals of Governmental Authorities required in connection therewith.

2.2.3 Operation and Maintenance. The Owner shall operate and maintain the Project to ensure that it remains qualified as an Eligible Energy Resource at all times during the term of this Agreement.

2.2.4 Changes to Operational Characteristics. The Owner and, if one is designated, the Owner Representative, shall promptly notify the SEU of any substantive changes to the operational characteristics of the Project, including providing the SREC Procurements Administrator with copies of any notices submitted to the DPSC pursuant to 26 Del. Admin C. § 3008(3.1.8) and any correspondence relating to any such notices.

2.2.5 Metering. The Owner shall: (a) install, operate, maintain and calibrate (as necessary) the Required Meter for the Project; (b) provide the SEU with a detailed description of the Required Meter (including meter ID, pulse radio, channels, etc., if any); (c) provide not less than 10 days advance notice of any testing or calibration of the Required Meter; and (d) deliver to the SEU copies of all test results of Required Meters promptly upon the completion of any such test. The SEU shall have the right to test any Required Meter and, if such meter is determined to be operating outside industry standards, to require the Owner to re-calibrate such meter, at the Owner's cost.

2.2.6 Inspection. The Owner shall permit the SEU and its designees to inspect the Project at any time during normal business hours to verify the Owner's compliance with the terms of this Agreement; *provided, however*, that the Owner shall not be responsible for the cost of any such inspection.

Section 2.3 Conditions.

2.3.1 Certification as an Eligible Energy Resource. The SEU's obligation to purchase Project SRECs is subject to the Project being certified as an Eligible Energy Resource by the DPSC.

2.3.2 Approval to Operate. The SEU's obligation to purchase Project SRECs is subject to the Owner's receipt of an approval to operate the Project from the Interconnecting Utility.

2.3.3 GATS Registration. The SEU's obligation to purchase Project SRECs is subject to the Owner's establishment of a GATS account.

2.3.4 Certifications. the Owner shall deliver to the SEU, promptly upon receipt thereof: (a) a copy of the DPSC certification of the Project as an Eligible Energy Resource; (b) a copy of the approval to operate the Project issued by the Interconnecting Utility; and (c) the Owner's GATS account number and a copy of the Owner's GATS registration. If the Project is designated as being eligible for the Delaware Equipment Bonus and/or the Delaware Workforce Bonus in Part I, the Owner shall provide the SEU with a copy of the DPSC certification that the Project qualifies for such credit(s) no later than 30 days after the Operation Date.

Section 2.4 Purchase Price and Payment Terms.

2.4.1 Purchase Price.

(a) The Purchase Price for Project SRECs created during Contract Years 1 through 7 will be the bid price set forth in the application submitted for such Project, as such bid price may be amended pursuant to the rules established by the SEU.

(b) For all Projects, the Purchase Price for Project SRECs created during Contract Years 8 through 20 shall be \$50 per SREC.

2.4.2 SREC Bonus. If the Delaware Equipment Bonus or the Delaware Workforce Bonus is specified in Part I and the DPSC certifies that the Project qualifies for either such bonus, payment of the Purchase Price will be based on the number of Project SRECs plus an additional 10%. If the Delaware Equipment Bonus and the Delaware Workforce Bonus is specified in Part I and the DPSC certifies that the Project qualifies for both such bonuses, payment of the Purchase Price will be based on the number of Project SRECs plus an additional 20%.

2.4.3 Payment. Subject to the limitations set forth in this Agreement: (a) for all Tier N-1, N-2 and E-1 Projects, the SEU shall pay the Payee for Project SRECs no later than

twenty-five (25) days after the end of the calendar quarter in which such SRECs were originally registered in the GATS account of the SEU; and (b) for all other Projects, the SEU shall pay the Payee for Project SRECs no later than thirty (30) days after the end of the calendar month in which such SRECs were originally registered in the GATS account of the SEU. The Program Administrator shall have the right to make payments hereunder by wire transfer. In the event the Program Administrator elects to make payment by wire transfer, Owner shall be responsible for providing the Program Administrator with account information and wiring instructions to facilitate such transfers.

2.4.4 Limitations.

- (a) The SEU shall not be obligated to pay for any SRECs in excess of the sum of: (i) the Maximum Annual Quantity; plus (ii) if applicable, any portion of the Excess Amount which it has elected to purchase pursuant to Section 2.1.2(a).
- (b) The SEU may withhold payment of any amounts disputed in good faith.

2.4.5 Payment Errors. In the event that any Party becomes aware of any payment error (whether such error was in the form of an underpayment or overpayment), such Party shall notify the other Parties in writing of such error and the Party required to make payment shall do so within thirty (30) days of such notification; *provided, however*, that no payment adjustment shall be required unless the foregoing notice is delivered within eleven (11) months of the date of the original payment.

Section 2.5 Completion Guarantee.

2.5.1 Guaranteed On-Line Date. The Owner shall cause the Operation Date to occur no later than the date which is 365 days after the Execution Date (such date, the "*Guaranteed On-Line Date*"), *provided, however*, that the Guaranteed On-Line Date shall be extended for up to 365 days due to: (a) a Force Majeure event; or (b) the failure by the Interconnecting Utility to complete the interconnection after the Owner submits a timely and complete interconnection application in accordance with Section 2.2.1.

2.5.2 Damages for Delayed Operation Date.

- (a) If the Operation Date does not occur by the Guaranteed On-Line Date, the Owner shall pay to the SEU, and if such amount is not paid, the SEU shall be entitled to draw against the Bid Deposit, an amount equal to 1/30 of the original Bid Deposit amount for each day (or portion thereof) of such delay, for up to 30 days of delay.
- (b) If the Operation Date does not occur by the date which is 31 days after the Guaranteed On-Line Date, the SEU shall have the right to terminate this Agreement.

- (c) The remedies set forth in Sections 2.5.2(a) and 2.5.2(b) shall be the Owner's exclusive liability based on a delay in achieving or a failure to achieve the Operation Date by the Guaranteed On-Line Date.
- (d) The Owner acknowledges and agrees that: (i) the SRECs being purchased by the SEU are for the benefit of certain retail electric suppliers operating in the State of Delaware; (ii) in the event the Operation Date does not occur by the Guaranteed On-Line Date, the damages to be suffered by the SEU and such electric suppliers would be difficult or impossible to determine with certainty; (iii) after taking into account the terms of this Agreement and all relevant circumstances as of the date hereof, the damages set forth in Section 2.5.2(a) represent reasonable and genuine estimates of such damages; and (iv) such damages are not intended to and do not constitute a penalty.

Section 2.6 Representations, Warranties and Acknowledgements.

2.6.1 Representations and Warranties of Owner. The Owner hereby represents and warrants to the SEU as follows:

- (a) unless it is an individual, it is duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization, and is duly authorized and qualified to do business therein, in Delaware and in all other jurisdictions in which the nature of the business conducted by it makes such qualification necessary;
- (b) it is not in violation of any Applicable Law in any manner that would reasonably be expected to affect its performance under this Agreement;
- (c) there are no legal, administrative or arbitral proceedings or actions, controversies or investigations, now pending or to its knowledge threatened against it which, if adversely determined, could reasonably be expected to affect its performance under this Agreement;
- (d) none of the execution, delivery or performance of this Agreement conflict with or result in a violation of the terms of its charter or by-laws or any agreement by which it is bound;
- (e) the execution, delivery and performance of this Agreement have been duly authorized by all requisite action;
- (f) this Agreement has been duly and validly executed and delivered by it and, when executed and delivered by the SEU, will constitute its legal, valid and binding obligation enforceable in accordance with its terms, except as the enforceability thereof may be limited by bankruptcy, insolvency, reorganization or moratorium or other similar laws relating to

the enforcement of creditors' rights generally and by general equitable principles;

- (g) it has rights in, and good title to the Collateral, and has full power and authority to grant to the SEU the security interest in the Collateral and to execute, deliver and perform its obligations in accordance with the terms of this Agreement without the consent or approval of any other Person other than any consent or approval that has been obtained;
- (h) the security interest granted by the Owner to the SEU pursuant to Section 5.2.1 constitutes a valid, legal and, upon the filing of the financing statements referred to in Section 5.2.2, a first-priority perfected security interest in all the Collateral granted by the Owner as security for the Secured Obligations;
- (i) the Project is an Eligible Energy Resource as defined by REPSA and will obtain all necessary approvals, regulatory or otherwise, to perform the obligations set forth herein;
- (j) the information set forth in Part I is true and accurate in all respects;
- (k) the Owner has received no supplemental funding from public sources other than the funding, if any, identified in Part I;
- (l) to the extent bidding in Tiers N-1, N-2 or N-3 all major components of the Project are or will be new and unused and are being or will be used for the first time in the Project; and
- (m) if a New System, its completed System Interconnection Application's acceptance date with the Interconnecting Utility will be after the first date of the preceding compliance year's auction process.

2.6.2 Acknowledgements by Owner. The Owner hereby acknowledges and agrees that:

- (a) the SEU has executed this Agreement and is purchasing Project SRECs for the benefit of certain retail electricity suppliers operating in the State of Delaware;
- (b) in executing and performing this Agreement, the SEU is acting on behalf of such suppliers;
- (c) such suppliers are third party beneficiaries of this Agreement who are entitled to directly enforce the terms hereof; and
- (d) the SEU may appoint a third-party (the "*Contracting Agent*") to perform any or all of the obligations and responsibilities of the SEU pursuant to

this Agreement and, in such event, the Owner shall recognize the authority of the Contracting Agent to perform such obligations and responsibilities.

2.6.3 Acknowledgement by SEU. The SEU acknowledges and agrees that it is not entitled to any portion of the energy output, capacity or ancillary services from the Project pursuant to this Agreement.

Section 2.7 Change in Estimated SREC Quantity. An Owner may not modify the Estimated SREC Quantity except as expressly permitted hereunder.

Section 2.8 Default And Remedies.

2.8.1 Events of Default. Each of the following shall constitute an "*Event of Default*" with respect to a Party:

- (a) such Party fails to pay when due any amount owed pursuant to this Agreement (other than an amount disputed in good faith) for a period of 5 days following receipt of notice of such failure;
- (b) any representation or warranty of such Party made pursuant to this Agreement shall have been incorrect when made and shall remain incorrect 30 days after notice thereof;
- (c) with respect to the Owner and, if one is designated, the Owner Representative: (i) the Bid Deposit or, if applicable, the Supplemental Credit Support is not maintained or the issuer thereof repudiates its obligations thereunder; or (ii) the lien required pursuant to Section 5.2 ceases to be a perfected, first priority security interest;
- (d) with respect to the Owner and, if one is designated, the Owner Representative, the nameplate rating of the Project varies from that set forth in Part I by more than: (i) 5% for a Tier N-1 Project, a Tier N-2 Project, a Tier E-1 Project, a Tier N-3 Project with a nameplate rating less than 500 kW or a Tier E-2 Project with a nameplate rating less than 500 kW; or (ii) 2.5% for a Tier N-3 Project with a nameplate rating of 500 kW or greater or a Tier E-2 Project with a nameplate rating of 500 kW or greater;
- (e) with respect to the Owner and, if one is designated, the Owner Representative, any Project SRECs (up to the Maximum Annual Quantity and, if applicable, any portion of any Excess Amount that the SEU elects to purchase pursuant to Section 2.1.2(a)) are not transferred to the SEU;
- (f) with respect to the Owner and, if one is designated, the Owner Representative, the Project shall have been designated in Part I as eligible for the Delaware Equipment Bonus or the Delaware Workforce Bonus and

the DPSC shall have failed to certify the Project as eligible for any such designated credit within 30 days after the Operation Date;

- (g) with respect to the Owner Representative (but not the Owner), either: (i) any representation or warranty of the Owner Representative made pursuant to Part III shall have been incorrect when made and shall remain incorrect 30 days after notice thereof; or (ii) the Owner Representative fails to perform any obligation pursuant to Part III for a period of 30 days following receipt of notice of such failure;
- (h) such Party fails to perform any other obligation pursuant to this Agreement for a period of 30 days following receipt of notice of such failure; or
- (i) a proceeding is instituted against such Party seeking to adjudicate it as bankrupt or insolvent and such proceeding is not dismissed within 60 days of filing; such Party makes a general assignment for the benefit of its creditors; a receiver is appointed on account of the insolvency of such Party; such Party files a petition seeking to take advantage of any Applicable Law relating to bankruptcy, insolvency, reorganization, winding up or composition or readjustment of debts; or such Party is unable to pay its debts when due or as they mature.

2.8.2 General Remedies.

- (a) Upon the occurrence of an Event of Default by the Owner, the SEU shall be entitled to: (i) exercise any remedies described in this Agreement which, unless specified to be exclusive, shall be deemed non-exclusive; (ii) exercise any remedies available at law or in equity, including specific performance, termination of this Agreement, and/or recovery of damages equal to the incremental cost of replacing the expected SREC output of the Project for the remaining term of this Agreement (based on a reasonable forecast of the market price for SRECs, as determined by an independent expert designated by the SEU); and/or (iii) suspend its performance hereunder.
- (b) Upon the occurrence of an Event of Default by the Owner Representative pursuant to Section 2.8.1(g), the Owner and/or the SEU shall be entitled to: (i) remove such Owner Representative as a Party to this Agreement by delivery of written notice to such Owner Representative and the other Party and, if necessary, replace such Owner Representative; and (iii) exercise any remedies available at law or in equity, including specific performance; *provided, however*, that neither the Owner nor the SEU may terminate this Agreement based on such an Event of Default by the Owner Representative.

- (c) Upon the occurrence of an Event of Default by the SEU, the Owner shall be entitled to: (i) exercise any remedies described in this Agreement which, unless specified to be exclusive, shall be deemed non-exclusive; (ii) exercise any remedies available at law or in equity, including specific performance or termination of this Agreement and recovery of damages equal to the difference, if positive, between the Purchase Price under this Agreement and the market price for SRECs in Delaware for the remaining term of this Agreement (based on a reasonable forecast of the market price for SRECs, as determined by an independent expert designated by the Owner); and/or (iii) suspend its performance hereunder. During any such suspension, the Owner and, if one is designated, the Owner Representative, shall have the right to transfer and sell Project SRECs to one or more third parties in order to mitigate its damages hereunder.

2.8.3 Specific Remedies.

- (a) Upon the occurrence of an Event of Default described in Section 2.8.1(f), the SEU may terminate this Agreement and recover damages equal to the remaining balance of the Bid Deposit. Payment or forfeiture of such amount shall be the exclusive liability of the Owner in such event.
- (b) The Owner and, if one is designated, the Owner Representative, acknowledges and agrees that: (i) in the event not all Project SRECs are transferred to the SEU or the Project fails to qualify for the Delaware Workforce Bonus after the SEU allots a portion of its procurement for SREC credits, the damages to be suffered by the SEU and certain retail electricity suppliers would be difficult or impossible to determine with certainty; (ii) after taking into account the terms of this Agreement and all relevant circumstances as of the date hereof, the damages set forth in Section 2.8.3(a) represent reasonable and genuine estimates of such damages; and (iii) such damages are not intended to and do not constitute a penalty.

2.8.4 Limitations of Liability.

- (a) Neither Party shall be liable to the other Party for consequential, incidental, punitive, exemplary or indirect damages, lost profits or other business interruption damages by statute, in tort or contract, or otherwise.
- (b) Except to the extent provided otherwise in this Agreement, the Owner Representative shall not be liable for a breach or default by the Owner.

Section 2.9 Force Majeure.

2.9.1 Excused Performance. Notwithstanding any other provision of this Agreement, a Party shall be excused from performance hereunder (other than payment of amount due) to the extent it is unable to perform due to a Force Majeure event.

2.9.2 Conditions. A Party claiming Force Majeure shall: (a) have the burden of proving the existence and consequences of a Force Majeure event; and (b) exercise all commercially reasonable efforts to resume performance as soon as reasonably practicable. The suspension of performance due to a Force Majeure shall be of no greater scope and of no longer duration than is required by such Force Majeure.

2.9.3 Notification. A Party affected by a Force Majeure event shall: (a) provide prompt written notice of such Force Majeure event to the other Party (in no event later than 5 days after the occurrence of such Force Majeure event), which notice shall include a description of the Force Majeure event and its effect on performance under this Agreement, and an estimate of the expected duration of such Party's inability to perform due to the Force Majeure; (b) keep the other Party reasonably apprised of efforts to address, and mitigate the impact of, the Force Majeure event; and (c) provide prompt notice to the other Party as soon as it is able to resume performance.

2.9.4 No Term Extension. In no event will any delay or failure of performance caused by a Force Majeure extend the term of this Agreement.

2.9.5 Extended Force Majeure. In the event that the Owner suffers a Force Majeure event that prevents it from performing hereunder for a period of 1 year or more, the SEU may, by written notice, terminate this Agreement without liability to the Owner.

PART III OWNER REPRESENTATIVE

The provisions of this Part III shall apply only if an Owner Representative is designated in Paragraph B of Part I.

Section 3.1 Agency Appointment. Subject to the Owner's rights to terminate or replace the Owner Representative pursuant to Section 3.3, the Owner hereby appoints the Owner Representative as the Owner's exclusive agent to manage, control, transfer, deposit and register the Project SRECs pursuant to the terms of this Agreement.

Section 3.2 Agency Responsibility. The Owner Representative shall be responsible for managing, controlling, transferring, depositing and registering the Project SRECs on behalf of the Owner within GATS pursuant to the terms of this Agreement. If the Owner has designated the Owner Representative as the Payee, the Owner Representative shall accept all payments hereunder as agent for, and on behalf of, the Owner.

Section 3.3 Termination or Replacement of Owner Representative.

3.3.1 Right to Terminate or Replace. the Owner may, at its discretion, terminate and/or replace the Owner Representative at any time and for any reason (or no reason), *provided, however,* that: (a) the Owner shall immediately notify the SEU of such termination or replacement; and (b) any replacement Owner Representative shall execute a counterpart of this Agreement and agree to be bound by the terms hereof.

3.3.2 Effect of Termination or Replacement. Immediately upon receipt by the SEU of written notice in accordance herewith from the Owner that an Owner Representative is being terminated or replaced, such Owner Representative shall be deemed to no longer be a Party to this Agreement. Termination or replacement of the Owner Representative shall not affect any other contractual arrangements between the Owner and the Owner Representative.

3.3.3 Replacement Owner Representative.

- (a) Immediately upon receipt by the SEU of: (i) written notice in accordance herewith from the Owner that it has designated a replacement Owner Representative; and (ii) an executed counterpart of this Agreement, signed by such replacement Owner Representative, such replacement Owner Representative shall be deemed to be a Party to this Agreement.

Section 3.4 Representations and Warranties of Owner Representative. The Owner Representative hereby represents and warrants to the SEU as follows:

- (a) it is duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization, and is duly authorized and qualified to do business therein, in Delaware and in all other jurisdictions in which the nature of the business conducted by it makes such qualification necessary;
- (b) it is not in violation of any Applicable Law in any manner that would reasonably be expected to affect its performance under this Agreement;
- (c) there are no legal, administrative or arbitral proceedings or actions, controversies or investigations, now pending or to its knowledge threatened against it which, if adversely determined, could reasonably be expected to affect its performance under this Agreement;
- (d) none of the execution, delivery or performance of this Agreement conflict with or result in a violation of the terms of its charter or by-laws or any agreement by which it is bound;
- (e) the execution, delivery and performance of this Agreement have been duly authorized by all requisite action;

- (f) this Agreement has been duly and validly executed and delivered by it and, when executed and delivered by the Owner and the SEU, will constitute its legal, valid and binding obligation enforceable in accordance with its terms, except as the enforceability thereof may be limited by bankruptcy, insolvency, reorganization or moratorium or other similar laws relating to the enforcement of creditors' rights generally and by general equitable principles;
- (g) the description of the Project set forth in Part I is true and accurate in all respects; and
- (h) it owns, leases, controls or is the direct assignee of all of the SRECs created by the Project and at least one other Eligible Energy Resource.

Section 3.5 Continuing Eligibility. The Owner Representative shall, at all times during the term of this Agreement, own, lease, control or be the direct assignee of all of the SRECs created by the Project and at least one other Eligible Energy Resource.

PART IV MINIMUM ANNUAL QUANTITY

The provisions of this Part IV shall apply only if the Project is designated as a Tier N-3 Project with a nameplate rating of 500 kW or greater or a Tier E-2 Project with a nameplate rating of 500 kW or greater in Paragraph D of Part I.

Section 4.1 Guaranteed Quantity.

4.1.1 Minimum Annual Quantity. During each Contact Year, the Owner shall transfer Project SRECs in an amount equal to no less than 80% of the Annual Contract Quantity (such amount, the "*Minimum Annual Quantity*").

4.1.2 Exclusive Remedy.

- (a) If, during any Contact Year, the Owner fails to transfer the Minimum Annual Quantity of Project SRECs to the SEU, the Owner shall pay the SEU damages equal to the product of: (i) the difference between the Minimum Annual Quantity and the quantity of Project SRECs delivered during such Contact Year; and (ii) the difference, if positive, between (A) the lesser of the prevailing market price of SRECs as reasonably determined by the SEU, and the applicable Alternative Compliance Payment and (B) the applicable price for Project SRECs under this Agreement. Payment of such amount shall be the exclusive liability of the Owner for any such failure with respect to any Contract Year.
- (b) The Owner and, if one is designated, the Owner Representative acknowledge and agree that: (i) the Project SRECs are for the benefit of

certain retail electric suppliers operating in the State of Delaware; (ii) if the Project produces less than the Minimum Annual Quantity during any Contract Year, the damages to be suffered by the SEU and such electric suppliers would be difficult or impossible to determine with certainty; (iii) after taking into account the terms of this Agreement and all relevant circumstances as of the date hereof, the damages set forth in Section 4.1.2(a) represent reasonable and genuine estimates of such damages; and (iv) such damages are not intended to and do not constitute a penalty.

Section 4.2 Supplemental Credit Support.

4.2.1 Obligation to Maintain. The Owner shall at all times maintain credit support (the "*Supplemental Credit Support*") in the following amounts:

- (a) during the first 7 Contract Years, 5% of the value of the Annual Contract Quantity for the first Contract Year; and
- (b) during the second 13 Contract Years, 10% of the value of the Annual Contract Quantity for the eleventh Contract Year.

4.2.2 Form of Supplemental Credit Support. The Supplemental Credit Support shall be in the form of cash, a letter of credit or other collateral acceptable to the SEU.

4.2.3 Obligation to Replenish. If the SEU draws on the Supplemental Credit Support, the Owner must replenish such Supplemental Credit Support to the required level within 3 Business Days.

**PART V
CREDIT SUPPORT**

Section 5.1 Bid Deposit.

5.1.1 Posting of Deposit. Unless the Project is designated as an "Operating Project" in Paragraph D of Part I (in which case no Bid Deposit was provided), the Owner shall cause the Bid Deposit to remain in effect for the benefit of the SEU. No interest shall be owed with respect to a Bid Deposit in the form of cash.

5.1.2 Return or Release of Deposit. Unless the Bid Deposit has been returned or released pursuant to Section 2.2.1(d), the SEU shall return or release any remaining balance of the Bid Deposit promptly after: (a) it receives written verification that the DPSC has certified the Project as an Eligible Energy Resource; (b) if the Project is a Tier N-3 Project with a nameplate rating of 500 kW or greater or a Tier E-2 Project with a nameplate rating of 500 kW or greater, the Owner provides the Supplemental Credit Support; and (c) the Owner has executed any documentation reasonably necessary to perfect the security interest described in Section 5.2.

5.1.3 Application of Deposit. The SEU shall be entitled to call on and/or apply the Bid Deposit as provided pursuant to this Agreement.

Section 5.2 Security Interest.

5.2.1 Grant.

- (a) As security for the performance by the Owner of its obligations under this Agreement (the "***Secured Obligations***"), the Owner hereby grants to the SEU a first-priority security interest, lien and pledge in and to all of the Owner's right, title and interest in and to all Project SRECs, whether now existing or hereafter arising, the GATS account of the Owner, and all proceeds of any of the foregoing (collectively, the "***Collateral***").
- (b) The SEU's security interest in and to the Collateral and the SEU's rights and the Owner's obligations hereunder, shall be absolute and unconditional irrespective of: (i) any change in the time, manner or place of payment of, or in any other term of, all or any of the Secured Obligations, or any other amendment or waiver of or any consent to any departure from the terms governing the Secured Obligations; (ii) any exchange, release or non-perfection of any Collateral, or any release or amendment or waiver of or consent to or departure from any guaranty, for any and all of the Secured Obligations; or (iii) any other circumstance that might otherwise constitute a defense available to, or a discharge of, the Owner in respect of the Secured Obligations or this Agreement.

5.2.2 Filing and Perfection.

- (a) The SEU is hereby authorized to file one or more financing statements, continuation statements and/or any other documents required for the purpose of perfecting, confirming, continuing, enforcing or protecting the SEU's security interest in the Collateral, with or without the signature of the Owner, naming the Owner as "debtor" and the SEU as "secured party."
- (b) The Owner, at its sole cost and expense, shall execute, acknowledge, deliver and cause to be duly filed any and all consents, instruments, certificates and documents and take any and all actions as the SEU may, at any time and from time to time, reasonably request in order to perfect, preserve and protect the SEU's security interest in and to the Collateral and the rights and remedies created hereby.

5.2.3 Remedy. Upon the occurrence of an Event of Default by the Owner, the SEU may take any lawful action that it deems necessary or appropriate to protect or realize upon its security interest in the Collateral or any part thereof, or exercise any other or additional rights or remedies exercisable by a secured party under the UCC or under any

other Applicable Law, including selling the Collateral or any part thereof in one or more parcels at public or private sale, at any exchange or broker's board or elsewhere, at such price or prices and on such other terms as the SEU may deem commercially reasonable in accordance with the UCC and as permitted by Applicable Law.

PART VI DEFINITIONS; RULES OF CONSTRUCTION

Section 6.1 Definitions. The following capitalized terms have the following meanings when used in this Agreement:

"Affiliate" means, with respect to any Person, another Person that controls, is under the control of, or is under common control with, such Person. The term "control" (including the terms "controls", "under the control of" and "under common control with") means the possession, directly or indirectly, of the power to direct or cause the direction of the management of the policies of a person or entity, whether through ownership interest, by contract or otherwise.

"Agreement" means this Solar Renewable Energy Credit Transfer Agreement between the Owner, the SEU and, if one is designated, the Owner Representative.

"Alternative Compliance Payment" has the meaning set forth in the REPSA.

"Annual Contract Quantity" means: (a) for the first Contract Year, the Estimated SREC Quantity; and (b) for each subsequent Contract Year, 99.5% of the Annual Contract Quantity in effect for the immediately preceding Contract Year.

"Applicable Law" means any law, statute, treaty, code, ordinance, regulation, certificate, order, license, permit or other binding requirement of any Governmental Authority now in effect or hereafter enacted, amendment to any of the foregoing, interpretations of any of the foregoing by a Governmental Authority having jurisdiction and any judicial, administrative, arbitral or regulatory decree, judgment, injunction, writ, order, award or like action applicable to any Party.

"Bid Date" shall mean the date specified as such in Paragraph E of Part I.

"Bid Deposit" means a deposit in the amount of \$100 per kW of the nameplate rating (DC at STC as designated by the solar module manufacturer) of the Project, in the form of a bid bond, letter of credit or cash.

"Business Day" means any calendar day that is not a Saturday, a Sunday or a state or federal holiday on which banks in Delaware are permitted or authorized to close.

"Code" means the U.S. Internal Revenue Code of 1986, including applicable rules and regulations promulgated thereunder, as amended from time to time.

"Collateral" has the meaning set forth in Section 5.2.1(a).

“Commencement Date” means the date as of which the SEU is obligated to purchase SRECs hereunder, as specified in Section 2.1.4(a) or 2.1.4(b).

“Contract Year” means each 12-month period commencing on the Commencement Date and each anniversary thereof.

“Contracting Agent” has the meaning set forth in Section 2.6.2.

“DC” means direct current electric energy.

“Delaware Equipment Bonus” has the meaning set forth in Paragraph D of Part I.

“Delaware Workforce Bonus” has the meaning set forth in Paragraph D of Part I.

“DPSC” means the Delaware Public Service Commission or any successor agency.

“Eligible Energy Resource” has the same meaning set forth in REPSA.

“Environmental Attribute” means any attribute of an environmental or similar nature (including all Generation Attributes) that is created or otherwise arises from the Project’s generation of electricity from solar energy in contrast with the generation of electricity using nuclear or fossil fuels or other traditional resources, excluding: (a) any such attribute not legally capable of being transferred to the SEU; and (b) Tax Credits. Forms of Environmental Attributes include any and all environmental air quality credits, green credits, carbon credits, carbon tax credits, emissions reduction credits, greenhouse gas credits, certificates, tags, offsets, allowances, or similar products, rights, claims or benefits, howsoever entitled. Environmental Attributes include those currently existing (such as SRECs) or arising during the term of this Agreement under local, state, regional, federal or international legislation or regulation relevant to the avoidance of any emission or to the promotion of renewable energy under any governmental, regulatory or voluntary programs, including the United Nations Framework Convention on Climate Change and related Kyoto Protocol or other programs, laws, or regulations involving or administered by the Clean Air Markets Division or other division or branch of the U.S. Environmental Protection Agency or any successor administrator or other federal agency or department, or any local, state, regional, or federal entity given jurisdiction over a program, or any voluntary program, involving transferability of, or credit or reporting rights or other rights or benefits for, attributes of an environmental or similar nature.

“Estimated SREC Quantity” means the quantity of SRECs designated in Paragraph D of Part I, as such quantity may be reduced pursuant to the terms of this Agreement.

“Event of Default” has the meaning set forth in Section 2.8.1.

“Excess Amount” means, with respect to the SRECs created by the Project during any Contract Year, any such SRECs in excess of the Maximum Annual Quantity.

“Execution Date” means the date this Agreement is signed by the SEU, as designated on the signature page of the counterpart executed by the SEU.

“Existing System” means a system with final interconnection approval before the first date of the preceding auction process (i.e. April 2, 2012 for compliance year 2012).

“Force Majeure” means an event or circumstance that prevents a Party from performing its obligations in accordance with the terms of this Agreement, which event or circumstance is not within the reasonable control, or the result of negligence, of such Party, including acts of God; unusually severe actions of the elements such as floods, inundation, landslides, earthquake, lightning, hurricanes, or tornadoes; unusually severe weather; terrorism; war (whether or not declared); sabotage, acts or threats of terrorism, riots or public disorders; national or regional strikes or labor disputes; delay in delivery of equipment comprising the Project so long as such equipment was ordered within 90 days of the Execution Date; and actions or failures to act of any Governmental Authority (including the failure to issue permits); *provided, however*, that Force Majeure shall not include: (a) any strike or labor dispute by any employees or the Owner or any other employees of contractors employed at the Project and aimed at the Owner or such contractor(s); (ii) changes in, or that otherwise affect, the price of SRECs; or (iii) equipment failure, unless caused by a circumstance that would otherwise constitute a Force Majeure.

“GATS” means the generation attribute tracking system used by PJM Interconnection, LLC to facilitate the transfer of SRECs.

“Generation Attribute” means any characteristic of the solar energy output of the Project other than energy, capacity or Tax Credits, including the Project’s generation source, geographic location, emission credits, carbon credits, vintage and eligibility for a renewable energy portfolio standard or comparable standard or program, including “generation attributes” as defined in REPSA.

“Governmental Authority” means any federal, state, local or municipal government, or quasi-governmental, regulatory or administrative agency, commission, court, tribunal or other body or authority exercising or entitled to exercise any administrative, executive, judicial, legislative, policy, regulatory, taxing or other binding jurisdiction, authority or power, including PJM, GATS and NERC.

“Guaranteed On-Line Date” has the meaning set forth in Section 2.5.1.

“Interconnecting Utility” means the Person that owns the electric transmission or distribution system with which the Project is directly interconnected.

“kW” means 1 kilowatt of electric power.

“Maximum Annual Quantity” means, for each Contract Year, 110% of the Annual Contract Quantity.

“Minimum Annual Quantity” has the meaning set forth in Section 4.1.1.

“MWh” means 1 megawatt hour of electric energy.

“**New System**” means a system with final interconnection approval after the first date of the preceding auction process (i.e. April 2, 2012 for compliance year 2012).

“**Operation Date**” means the date on which the Project commences generating electricity.

“**Owner**” means the Person identified as such in Paragraph A of Part I.

“**Owner Representative**” means the Person, if any identified as such in Paragraph B of Part I.

“**Party**” means each of the Owner, the SEU and, if one is designated, the Owner Representative.

“**Payee**” means the Owner or the Owner Representative, as designated in Paragraph C of Part I.

“**Person**” means any natural person, corporation, limited liability company, general partnership, limited partnership, proprietorship, other business organization, trust, union, association or Governmental Authority.

“**PJM**” means PJM Interconnection, LLC or any successor organization thereto.

“**Project**” has the meaning set forth in the introductory paragraph of this Agreement, as such Project is described further in Paragraph D of Part I.

“**Project SRECs**” has the meaning set forth in Section 2.1.1.

“**Purchase Price**” means, with respect to any Contract Year, the amount per Project SREC to be paid by the SEU in accordance with Section 2.4.1.

“**REPSA**” means the Delaware Renewable Energy Portfolio Standards Act (26 Del. C. §§ 351 *et seq.*), as amended, and the implementing rules and regulations thereunder.

“**Required Meter**” means: (a) for any Tier 1 Project that receives the base price or alternate price set forth in the table included in Section 2.4.1(a), at Owner’s option, a standard, utility-grade meter or a revenue-grade meter, in either case capable of on-line monitoring; and (b) for any other Project, a revenue-grade meter capable of on-line monitoring.

“**Secured Obligations**” has the meaning set forth in Section 5.2.1(a).

“**SEU**” has the meaning set forth in the introductory paragraph of this Agreement.

“**SREC**” means a tradable instrument which represents or is associated with 1 MWh of electric energy derived from an Eligible Energy Resource that generates electric energy using solar photovoltaic technology and which qualifies as a “Renewable Energy Credit” under REPSA, together with any Environmental Attributes associated with such energy or the generation thereof.

“*STC*” means standards test conditions, which are: (a) internal cell temperature of 25° C; and (b) irradiance of 1,000 watts per square meter with an air mass 1.5 spectrum.

“*Supplemental Credit Support*” has the meaning set forth in Section 4.2.1.

“*Tax Credits*” means: (a) investment tax credits under Section 48 of the Code; (b) cash grants in lieu of investment tax credits as described in Section 1603 of the American Recovery and Reinvestment Act of 2009 (P.L. 111-5); and (c) any federal, state, or local tax credits, cash grants in lieu of tax credits, tax exemptions, depreciation, tax attributes or benefits, or similar programs determined by reference to the construction, operation or ownership of, investment in, or production of electricity from, renewable energy production facilities, in each case whether in existence as of the Bid Date or arising thereafter; *provided, however*, that Tax Credits shall not include any carbon tax credits.

“*Tier N-1 Project*” has the meaning set forth in Paragraph D of Part I.

“*Tier N-2 Project*” has the meaning set forth in Paragraph D of Part I.

“*Tier N-3 Project*” has the meaning set forth in Paragraph D of Part I.

“*Tier E-1 Project*” has the meaning set forth in Paragraph D of Part I.

“*Tier E-2 Project*” has the meaning set forth in Paragraph D of Part I.

“*UCC*” means the Uniform Commercial Code as in effect in the State of Delaware.

Section 6.2 Rules of Construction. The following rules of construction shall apply when interpreting the terms of this Agreement:

- (a) references to “Parts,” “Sections,” or “Exhibits” shall be to Parts, Sections or Exhibits of this Agreement unless expressly provided otherwise;
- (b) each Exhibit to this Agreement shall be deemed to be incorporated herein by reference as if such Exhibit were set forth in its entirety herein;
- (c) the terms “herein,” “hereby,” “hereunder,” “hereof” and terms of similar import in this Agreement refer to the Agreement as a whole and not to any particular subdivision unless expressly so limited and the term “this Section” refers only to the Section hereof in which such words occur;
- (d) use of the words “include” or “including” or similar words shall be interpreted as “including but not limited to” or “including, without limitation”;
- (e) any reference to any Applicable Law shall be deemed to refer to that law as it may be amended from time to time;

- (f) the headings appearing in this Agreement are for convenience only, do not constitute any part of this Agreement and shall be disregarded in construing the language contained herein; and
- (g) no term of this Agreement shall be construed in favor of, or against, a Party as a consequence of one Party having had a greater role in the preparation or drafting of this Agreement, but shall be construed as if the language were mutually drafted by both Parties with full assistance of counsel.

PART VII GENERAL PROVISIONS

Section 7.1 Notices. Any notices, requests, consents or other communications required or authorized to be given by one Party to another Party pursuant to this Agreement shall be in writing. Such communications directed to the Owner or, if one is designated, the Owner Representative, shall be addressed as set forth in Part I. Communications directed to the SEU shall be addressed as set forth below. Any Party may update its address for notice by providing written notice in accordance herewith. Written notices, requests, consents and other communications shall be deemed to have been received on the Business Day following the day on which it was delivered. Notwithstanding the foregoing, in the event the SEU establishes an on-line web site for certain routine communications pursuant to this Agreement, notice of such routine matters shall be permitted in accordance with procedures established by the SEU.

SEU:

[Contract Administrator]

Section 7.2 Governing Law. This Agreement and the rights and obligations of the Parties shall be governed by and construed, enforced and performed in accordance with the laws of the State of Delaware, without regard to principles of conflicts of law.

Section 7.3 Dispute Resolution. All disputes arising between or among the Parties pursuant to this Agreement shall be submitted to neutral, non-binding mediation. If the Parties to such dispute are unable to agree upon a mutually acceptable mediator, each such Party shall designate a mediator and those mediators shall agree on a single, neutral mediator to conduct the mediation. All costs of the neutral mediator shall be shared equally by the Parties. If the Parties are unable to resolve a dispute within 30 days of the dispute being submitted to mediation, any Party to the dispute shall be entitled to initiate litigation in a court of competent jurisdiction.

Section 7.4 Jurisdiction and Venue. THE PARTIES AGREE THAT JURISDICTION AND VENUE IN ANY ACTION BROUGHT BY ANY PARTY PURSUANT TO THIS AGREEMENT SHALL PROPERLY (AND EXCLUSIVELY) LIE IN ANY FEDERAL OR STATE COURT LOCATED IN NEW CASTLE COUNTY, DELAWARE. BY EXECUTION AND DELIVERY OF THIS AGREEMENT, EACH PARTY IRREVOCABLY SUBMITS TO THE JURISDICTION OF ANY SUCH COURT FOR ITSELF AND IN RESPECT OF ITS

PROPERTY WITH RESPECT TO SUCH ACTION. EACH PARTY IRREVOCABLY AGREES THAT VENUE WOULD BE PROPER IN ANY SUCH COURT, AND HEREBY WAIVES ANY OBJECTION THAT ANY SUCH COURT IS AN IMPROPER OR INCONVENIENT FORUM FOR THE RESOLUTION OF SUCH ACTION.

Section 7.5 Service of Process. Each Party: (a) irrevocably waives personal service of process in any litigation relating to this Agreement; and (b) irrevocably consents to service of process in any action or proceeding arising out of, or relating to, this Agreement by the mailing of copies thereof by registered mail, postage prepaid, such service to become effective 10 days after such mailing; *provided, however*, that nothing in this Section 7.5 shall affect the right of a Party to serve process in any other manner permitted by Applicable Law.

Section 7.6 Waiver of Right to Jury Trial. TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, AND AS SEPARATELY BARGAINED-FOR CONSIDERATION, EACH PARTY HEREBY WAIVES ANY RIGHT TO TRIAL BY JURY IN CONNECTION WITH ANY CLAIM ARISING OUT OF, OR RELATING TO, THIS AGREEMENT.

Section 7.7 Records. Each Party shall keep and maintain complete and accurate records and all other data reasonably necessary for the proper administration of this Agreement. Any Party shall provide such records and data to another Party within 15 days of a written request for such information. All such records and data shall be retained by each Party for at least 3 years following the year in which such records were created.

Section 7.8 Assignment.

7.8.1 Restrictions. Except as permitted pursuant to Section 7.8.2, neither the Owner nor the Owner Representative may assign this Agreement or any portion thereof or delegate any of its duties hereunder except where otherwise provided in this Agreement, without the prior written consent of the SEU. Without limiting the foregoing, the Owner may not sell, assign, convey, dispose of or otherwise transfer the Project without assigning this Agreement to the purchaser, assignee or transferee.

7.8.2 Permitted Assignments. The Owner may assign this Agreement without the consent of the SEU: (a) in connection with any financing of the Project, which financing shall be at the Owner's sole expense; or (b) to a purchaser or transferee of the Project provided all the requirements of the Section 7.8.2 are met. With respect to any permitted assignment of this Agreement: (i) the assigning Party shall provide at least thirty (30) days prior notice of any such assignment, which notice shall include the name of, and contact information for, the assignee; (ii) the assignee shall expressly assume the assignor's obligations hereunder pursuant to an agreement in form and substance reasonably acceptable to the non-assigning Party; and (iii) no such assignment shall relieve the assignor of its obligations hereunder.

7.8.3 Consent to Assignment. Upon or prior to a permitted assignment in connection with a financing of the Project, the SEU agrees to execute a written consent in a form reasonably acceptable to the SEU. If such written consent is not requested, the Owner

shall notify the SEU of any such assignment to its secured lender(s) no later than thirty (30) days after such assignment.

7.8.4 Binding Effect. This Agreement, as it may be amended from time to time, shall be binding upon, and inure to the benefit of, the Parties and their respective successors and permitted assigns.

Section 7.9 Delay and Waiver. Except as otherwise provided in this Agreement, no delay or omission to exercise any right, power or remedy accruing to a Party upon any breach or default by the other Party shall impair any such right, power or remedy, nor shall it be construed to be a waiver of any such similar breach or default thereafter occurring; nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring.

Section 7.10 Relationship of the Parties. This Agreement shall not be interpreted to create an association, joint venture, or partnership between or among any of the Parties or to impose any partnership obligation or liability upon any Party.

Section 7.11 Survival of Obligations. Applicable provisions of this Agreement shall continue in effect after expiration or termination of this Agreement, including early termination, to the extent necessary to enforce or complete the duties, obligations and responsibilities of the Parties arising prior to such expiration or termination, including to provide for final billings and adjustments related to the period prior to termination and payment of any money owed pursuant to this Agreement.

Section 7.12 Severability. In the event any of the terms, covenants, or conditions of this Agreement, its Exhibits or the application of any such terms, covenants or conditions, shall be held invalid, illegal or unenforceable by any court or administrative body having jurisdiction, all other terms, covenants and conditions of the Agreement shall remain in full force and effect.

Section 7.13 Entire Agreement. This Agreement constitutes the entire agreement between and among the Parties and supersedes all previous and collateral agreements or understandings with respect to the subject matter hereof.

Section 7.14 Amendments. Amendments to the terms of this Agreement (including any Exhibit hereto) shall only be effective if made in writing and signed by the Parties.

Section 7.15 Headings. Captions and headings used in this Agreement are for ease of reference only and do not constitute a part of this Agreement.

Section 7.16 Counterparts. This Agreement and any amendment hereto may be executed in two or more counterparts, all of which taken together shall constitute a single agreement.

Section 7.17 Further Assurances. Each of the parties hereto agree to cooperate with the other and to provide such information, execute and deliver any instruments and documents and to take such other actions as may be necessary or reasonably requested by the other party, which are not inconsistent with the provisions of this Agreement and which do not involve the assumptions of

obligations other than those provided for in this Agreement, in order to give full effect to this Agreement and to carry out the intent of this Agreement.

[signature page follows]

IN WITNESS WHEREOF, the Parties have executed this Agreement the day and year first above referenced.

Owner:

[Name of Owner]

By: _____

Owner Representative:

[Name of Owner Representative]

By: _____

SEU One, LLC

By: _____

Date: _____

Exhibit A
Estimated First Year Energy Output

Exhibit C

STATE OF DELAWARE

PILOT 2013 PROGRAM

FOR THE PROCUREMENT OF

SOLAR RENEWABLE ENERGY CREDITS

~~December, 2011 (REVISED)~~

November 20, 2012

TABLE OF CONTENTS

1.	Statutory Background	1
2.	Solar Renewable Energy Credits	2
	2.1 General	2
	2.2 Banking of SRECs	32
	2.3 Bonus for Use of In-State Equipment or Workforce	3
3.	The Delaware Renewable Energy Taskforce.....	3
4.	Program Administration; Eligibility	6
	4.1 Public Solicitations	6
	4.2 Owner Qualifications.....	56
	4.3 Eligible Projects	7
	4.4 Ongoing Program Evaluation	8
5.	Bid Applications	9
	5.1 General Requirements.....	9
	5.2 Estimated Output	810
	5.3 Bid Deposit	10
6.	SREC Transfer Agreements.....	11
	6.1 Term of Agreement.....	12
	6.2 SREC Quantity.....	12
	6.3 Pricing	13
	6.4 Utility Interconnections	1314
	6.5 Guaranteed On-Line Date; Delay Liquidated Damages	1315
	6.6 Payment	1415
	6.7 Metering	1415
	6.8 Conditions Precedent	1415
	6.9 Performance Credit Support	1516
	6.10 Project Maintenance; Inspections	1516
	6.11 Excused Performance.....	1617
	6.12 Default Provisions.....	1617
	6.13 Remedies.....	1718
	6.14 Replacement of Owner Representative.....	1718
7.	Bid Awards	1819
	7.1 Solicitations for Tier 1 and Tier 2-A Projects.....	18
	7.2 Competitive Solicitations.....	1920
	7.3 Bidding Ties.....	2021
8.	Solicitation for 2011 Compliance Year	2222
	8.1 Resource Allocation.....	2222
	8.2 Pricing	22

INDEX OF DEFINED TERMS

<i>Bidding Tie</i>	20	<i>Minimum Annual Quantity</i>	12
<i>Contract Maximum</i>	11	<i>MWh</i>	2
<i>Delaware Equipment Bonus</i>	3	<i>Owner</i>	5
<i>Delaware Workforce Bonus</i>	3	<i>Owner Representative</i>	6
<i>Delmarva</i>	3	<i>REC</i>	2
<i>DPSC</i>	1	<i>REPSA</i>	1
<i>Eligible Energy Resources</i>	1	<i>SEU</i>	3
<i>Estimated SREC Quantity</i>	9	<i>SREC</i>	2
<i>Execution Date</i>	10	<i>SREC Procurement Agent</i>	5
<i>GATS</i>	2	<i>SREC Procurement Pilot Program</i>	4
<i>Generation Unit</i>	1	<i>SREC Transfer Agreement</i>	8
<i>GEP</i>	6	<i>STC</i>	5
<i>Guaranteed On-Line Date</i>	14	<i>Taskforce</i>	3
<i>kW</i>	5		

APPENDICES

- Appendix A Form of Bid Application
- Appendix B Form of SREC Transfer Agreement

STATE OF DELAWARE
PILOT-2013 PROGRAM
FOR THE PROCUREMENT OF
SOLAR RENEWABLE ENERGY CREDITS

1. Statutory Background

The Delaware Renewable Energy Portfolio Standards Act (as amended, “REPSA”) requires retail electricity suppliers operating in the State of Delaware to purchase energy from “*Eligible Energy Resources*” to meet a portion of their retail load.¹ For the ~~2011-2013~~ compliance year (beginning June 1, ~~2011~~2013), retail electricity suppliers must purchase at least ~~7~~10% of their retail load in Delaware from renewable resources.² That requirement increases incrementally each subsequent compliance year, up to 25% for the 2025 compliance year. The cost of procuring renewable energy to satisfy the requirements of REPSA is passed through to retail customers.

REPSA was amended in 2007 to require that a certain portion of each retail electricity supplier’s renewable energy requirement be satisfied with energy from solar technologies. The 2010 amendments to REPSA established a solar set aside of ~~0.200.60%~~ for the ~~2011-2013~~ compliance year, which increases incrementally to 3.50% for the 2025 compliance year. For 2026 and future compliance years, the Delaware Public Service Commission (“DPSC”) will establish solar set-asides at levels at least equal to the 2025 set-aside.

To encourage the development of new renewable energy generation, REPSA mandates that no more than 1% of the renewable energy purchase requirement can be satisfied by purchases from renewable energy generation resources (each, a “*Generation Unit*”) that were in commercial operation prior to January 1, 1998. For the 2026 and subsequent compliance years, no such pre-existing Generation Units will be eligible to satisfy any portion of the REPSA requirement.

¹ Eligible Energy Resources are defined to include those that produce solar photovoltaic or solar thermal energy, wind energy, ocean energy, geothermal energy or energy from fuel cells powered by renewable fuels. Also included are biogas, small-scale hydroelectric, biomass and certain qualifying landfill gas recovery projects. Eligible Energy Resources do not include waste-to-energy facilities, incinerators or generating resources fueled by fossil-fuel waste products.

² REPSA was amended in Jul 2011 to provide: “[b]eginning with compliance year 2012, commission-regulated electric companies shall be responsible for procuring RECs, SRECs and any other attributes needed to comply with subsection (a) of this section with respect to all energy delivered to such companies’ end use customers.” 26 Del. C. §354(e) Accordingly, Delmarva Power is now responsible for REPSA compliance for its entire delivery load.

When it enacted REPSA, the Delaware General Assembly acknowledged that “the benefits of electricity from renewable energy resources accrue to the public at large, and that electric suppliers and consumers share an obligation to develop a minimum level of these resources in the electricity supply portfolio of the state.”²³ It therefore directed the DPSC to “establish, maintain or participate in a market-based renewable energy tracking system to facilitate the creation and transfer of renewable energy credits among retail electricity suppliers.”³⁴

2. Solar Renewable Energy Credits

2.1 General

To implement the mandate of REPSA, the DPSC adopted regulations that recognize the creation, and facilitate the tracking through PJM Interconnection’s Generation Attributes Tracking System (“*GATS*”), of renewable energy credits (each, a “*REC*”). A REC is a tradable instrument that represents the non-price characteristics (*e.g.*, fuel type, geographic location, emissions and vintage) of electric energy derived from an Eligible Energy Resource.⁴⁵ One REC is equivalent to such characteristics associated with 1 megawatt-hour (“*MWh*”) of energy derived from such a resource. A solar renewable energy credit (an “*SREC*”) represents the same non-price characteristics of 1 MWh of energy derived from an Eligible Energy Resource that generates electric energy using solar photovoltaic technology.

RECs and SRECs are created upon the generation of electricity by an Eligible Energy Resource and the registration of such REC or SREC within GATS. Each owner of an Eligible Energy Resource is entitled to one REC or SREC, as applicable, for each MWh of energy generated by the resource. Such owners must therefore have an account within the GATS or have arranged with another entity that has such an account to act on its behalf.

2.2 Banking of SRECs

²³ 26 Del. Code Regs. C. § 351(b). The benefits recognized by the General Assembly include “improved regional and local air quality, improved public health, increased electric supply diversity, increased protection against price volatility and supply disruption, improved transmission and distribution performance, and new economic development opportunities.” *Id.*

³⁴ *Id.* § 359(a).

⁴⁵ A REC does not include any emission reduction credits or allowances required to comply with any necessary permits for Generation Units.

Once a REC or SREC is created, it continues to exist for three years or until it is retired to satisfy the requirements of REPSA. Such three-year period is tolled during any period that a REC or SREC is held by the Delaware Sustainable Energy Utility (the “*SEU*”).

2.3 Bonus for Use of In-State Equipment or Workforce

Generation Units sited in Delaware are entitled to a 10% bonus on REC and SREC production if: (a) 50% or more of the cost of the renewable energy equipment comprising the Generation Unit (including mounting components) is manufactured in Delaware (the “*Delaware Equipment Bonus*”); or (b) the Generation Unit is constructed and/or installed either with a workforce at least 75% of whom are Delaware residents or by a company that employs at least 75% Delaware residents (the “*Delaware Workforce Bonus*”). Generation Units that meet both criteria are entitled to an aggregate 20% bonus. Satisfaction of these criteria must be certified by the DPSC.⁵⁶

3. The Delaware Renewable Energy Taskforce

The 2010 amendments to REPSA established the Renewable Energy Taskforce (the “*Taskforce*”) to make “recommendations about the establishment of trading mechanisms and other structures to support the growth of renewable energy markets in Delaware.”⁶⁷ The Taskforce was directed to find ways to increase deployment of solar generation and enhance the market for SRECs. Its responsibilities include making recommendations about the following:

- establishing a balanced market mechanism for REC and SREC trading;
- establishing REC and SREC aggregation mechanisms and other devices to encourage the deployment of solar energy technologies in Delaware with the least impact on retail electricity suppliers, municipal electric companies and rural electric cooperatives;

⁵⁶ Eligibility for the Delaware Equipment Bonus and the Delaware Workforce Bonus shall be determined solely by the DPSC.

⁶⁷ *Id.* § 360(d). The Taskforce is comprised of 11 members representing a broad cross-section of entities interested in and concerned with the implementation of renewable energy policy in Delaware. The 2010 amendment to REPSA stipulates that the Taskforce be made up of: (a) four appointments by the Secretary of the Delaware Department of Natural Resources and Environmental Control, including one from the renewable energy research and development industry, one from the local renewable energy manufacturing industry and one from an environmental advocacy organization; (b) one appointment by the DPSC; (c) one appointment by Delmarva Power & Light Company (“*Delmarva*”); (d) one appointment by the Delaware Electric Cooperative; (e) one appointment by municipal electric companies; (f) one appointment by the SEU; (g) one appointment by the Delaware Public Advocate; and (h) one appointment by the Delaware Solar Energy Coalition. *Id.* § 360(d)(1).

- minimizing the cost for complying with REPSA;
- establishing revenue certainty for appropriate investment in solar renewable energy technologies, including consideration of long-term contracts and auction mechanisms;
- establishing mechanisms to maximize in-state solar renewable energy generation and local manufacturing; and
- ensuring that residential, commercial and utility scale photovoltaic and solar thermal systems of various sizes are financially viable and cost-effective instruments in Delaware.

The ~~In 2010, the~~ Taskforce appointed a special subcommittee to consider and make recommendations regarding the SREC procurement process. That subcommittee met on numerous occasions over several months and evaluated a variety of alternative approaches to SREC procurement in an effort to reach a consensus on a comprehensive program designed to meet the objectives set forth in REPSA with respect to the development of solar generation resources. Based on the subcommittee's work, the Taskforce is ~~recommending~~ recommended for approval to the DPSC a statewide pilot program for the 2011 compliance year (the "*SREC Procurement Pilot Program*") that ~~it believes will to~~ encourage solar development in the State of Delaware while minimizing costs for owners, developers, aggregators, consumers and other participants in the SREC market in Delaware.

DPSC found that the proposed SREC Procurement Pilot Program, subject to certain changes relating to competitive bidding and GEP grants, adequately balanced the matters the Taskforce was instructed to address and was reasonable for a pilot program. (Final Findings, Opinion and Order in PSC Docket No. 11-399, DPSC Order No. 8093). In approving the proposal, DPSC stated that it would retain a consultant to conduct an independent review of the SREC Procurement Pilot Program to determine whether a long-term SREC contracting process should continue and, if so, to examine any associated issues, including but not limited to: (1) whether procurements should be by tiers, and if so, the number of tiers and cut-offs points between tiers; (2) whether there should be competitive bidding for all projects or all tiers; (3) whether administratively-set pricing should be used, if so, for which tier or tiers, and if so, the process by which pricing should be determined (including an assessment of the inputs and assumptions that go into the model by which administratively-set prices are developed); and (4) the effect of the SEU's involvement on the Pilot Program's

administration and costs. Following DPSC's decision, Delmarva filed a modified SREC Procurement Pilot Program document reflecting the changes ordered by DPSC.

In April 2012, the SEU conducted the first round of the SREC Procurement Pilot Program and awarded twenty-year SREC contracts to 166 Delaware-sited systems totaling 7.68 MW of capacity. The solicitation was subscribed to by more than 23 MW of PV capacity from 548 individual systems.

Pursuant to Order No. 8093, DPSC retained a consultant to conduct an independent review of the SREC Procurement Pilot Program. The consultant found that the solicitation was well subscribed, with each of the program tiers oversubscribed by at least 2 to 1, and that the legislatively mandated bonuses for use of in-state equipment or workforce were very effective. Based upon feedback from subscribers as well as its own analysis, the consultant identified potential alterations to the program to reduce ratepayer impacts and create a more competitive solicitation. The consultant additionally identified that several system owners commented upon the necessity of owner representatives and their inability to represent themselves in the program.

The Taskforce considered the implementation of the SREC Procurement Pilot Program and the consultant's report and recommendations. Based upon its review, the Taskforce recommends the following SREC procurement program for the 2013 compliance year (the "2013 SREC Procurement Program").

4. Program Administration; Eligibility

4.1 Public Solicitations

The Taskforce believes that the procurement of SRECs by retail electricity suppliers operating in the State of Delaware should be implemented through public solicitations, which can be efficiently managed by the SEU.⁷ ~~The SEU will issue solicitations based on the SREC requirements of the participating retail electricity suppliers managed by the SEU.~~⁸ Solicitations under the Pilot Program were managed by the SEU and the Taskforce has approved the use of the SEU for the Procurement Program.⁹ The solicitations will be for SRECs and other environmental attributes^{8,10} created by the Eligible Energy Resources, but will not cover the energy output of the resources. Upon receipt and evaluation of the applications received in response to each solicitation, the SEU will award bids and execute agreements based on the criteria set forth in ~~the~~ this 2013 SREC Procurement Pilot Program.

4.2 Owner Qualifications

To apply as an owner (an "**Owner**") of an Eligible Energy Resource pursuant to the 2013 SREC Procurement Pilot Program: (a) ~~if the resource has an aggregate nameplate rating of at least 100 kilowatts ("kW") (DC) at standard test conditions ("STC")~~Program, the applicant must own, lease, control or be the direct assignee of all of the SRECs created by such resource; or (b) ~~if the resource has an aggregate nameplate rating of less than 100 kW at STC, the applicant must own, lease, control or be the direct assignee of all of the SRECs created by such resource and at least one other Eligible Energy Resource.~~⁹ ~~Any other party intending~~

⁷ ~~It is anticipated that the SEU will select a third party (the "**SREC Procurement Agent**") to perform some or all of its duties with respect to the SREC Procurement Pilot Program, including conducting solicitations, evaluating bids and executing agreements on behalf of the SEU. If it does so, the process for selecting the SREC Procurement Agent, and the choice of the SREC Procurement Agent itself, would be subject to the consent of the participating retail electricity suppliers.~~

⁸ The SEU will use a third party (the "**SREC Procurement Agent**") to perform some or all of its duties with respect to the 2013 SREC Procurement Program, including conducting solicitations, evaluating bids and executing agreements on behalf of the SEU. As with the SREC Procurement Pilot Program, SRECTrade will be the SREC Procurement Agent for the 2013 compliance year.

⁹ As with the Pilot Program, the recovery of costs incurred by the SEU will be dealt with in separate proceedings.

^{8,10} In addition to SRECs, environmental attributes include those attributes created from the Generation Unit's generation of electricity from solar energy in contrast with the generation of electricity using nuclear or fossil fuels or other traditional resources, such as emission credits, carbon credits, air quality credits, green credits, carbon tax credits, emissions reduction credits, greenhouse gas credits, certificates, tags, offsets, allowances and similar products, rights, claims or benefits, whether now existing or arising in the future. However, environmental attributes do not include tax credits other than carbon tax credits.

⁹ ~~An Owner need not have been awarded SREC Transfer Agreements with respect to its Eligible Energy Resources.~~

~~to participate in the SREC Procurement Pilot Program will be required to.~~¹¹ Any party participating in the 2013 SREC Procurement Program may submit an application jointly with an entity that has executed agreements¹⁰¹² to control the SRECs produced by two or more Eligible Energy Resources (such entity, an “*Owner Representative*”).

An Owner that is qualified to submit an application on its own behalf may, at its option, elect to designate an Owner Representative. Affiliates of retail electricity suppliers are permitted to participate in the 2013 SREC Procurement Pilot Program as Owners or Owner Representatives (so long as they satisfy the applicable requirements for being an Owner or Owner Representative).

4.3 Eligible Projects

To qualify for participation in the 2013 SREC Procurement Pilot Program, a Generation Unit must: (a) qualify as a “Solar Photovoltaic Energy Resource” in accordance with the DPSC rules; and (b) be eligible for certification as an Eligible Energy Resource under REPSA; ~~and (c) be comprised of new (i.e., unused) equipment. Only Generation Units that have received approvals of their “Accepted Completed Solar System Interconnection Applications” dated December 1, 2010 or later will be eligible to participate in the SREC Procurement Pilot Program. Tier 2 B and Tier 3 projects may only participate in the SREC Procurement Pilot Program if they do not receive any supplemental funding from a public source (other than grants in lieu of investment tax credits). Tier 1 and Tier 2 A projects may accept such grants in lieu of investment tax credits as well as grants associated with the Delaware Green Energy Program (“GEP”).~~

In order to increase the likelihood that a wide variety of residential and commercial projects have an opportunity to participate in the 2013 SREC Procurement Pilot Program, the Taskforce has established distinct tiers of Generation Units (based on their date of interconnection approval and nameplate capacity) for which different pricing, bid rules and other contract terms and conditions will apply. The tiers are as follows:

¹¹ An Owner need not have been awarded SREC Transfer Agreements with respect to its Eligible Energy Resources.

¹⁰¹² An Owner Representative need not have been awarded SREC Transfer Agreements with respect to its Eligible Energy Resources. It need only have executed agreements with Owners of two or more such resources.

GENERATION UNIT TIER DESIGNATIONS

<u>New Systems¹³</u>	
<u>Tier</u>	<u>Nameplate Rating (DC at STC)</u>
<u>N-1</u>	Less than or equal to <u>50-30 kW</u>
<u>2-AN-2</u>	Greater than <u>50-30 kW</u> but less than or equal to <u>250-200 kW¹⁴</u>
<u>2-BN-3</u>	Greater than <u>250-200 kW</u> but less than or equal to <u>500 kW-2 MW</u>
<u>Existing Systems¹⁵</u>	
<u>Tier</u>	<u>Nameplate Rating (DC at STC)</u>
<u>E-1</u>	<u>Less than or equal to 30 kW¹⁶</u>
<u>3E-2</u>	Greater than <u>500-30 kW</u> but less than or equal to <u>2 MW</u>
<u>4</u>	Greater than <u>2 MW¹⁴</u>

The capacity of a Generation Unit and its applicable tier will be based on the aggregate nameplate rating of all solar arrays: (a) that are located on the same parcel of land (as established by the local taxing authority) or share a single utility interconnection point; and (b) for which applications are submitted for the same compliance year.¹²¹⁷

4.4 Ongoing Program Evaluation

The Taskforce will evaluate the 2013 SREC Procurement Pilot Program on a periodic basis to consider whether any changes or modifications are necessary or advisable. Any changes or modifications to the

¹³ Eligible "New Systems" are systems with final interconnection approval after the first date of the preceding auction process (i.e., April 2, 2012 for compliance year 2012).

¹⁴ 35% of the new systems procurement is reserved for Tier N-2. New systems procurement from Tier N-3 shall not exceed 35%.

¹⁵ Eligible "Existing Systems" are systems with final interconnection approval before the first date of the preceding auction process. New Systems and Existing Systems may be referred to individually as a "system" or collectively as "systems" throughout.

¹⁶ 50% of the existing systems procurement is reserved for Tier E-1. Existing systems procurement from Tier E-2 shall not exceed 50%.

¹⁴ The procurement of SRECs for Tier 4 for the 2011 compliance year was satisfied in full with the purchase of SRECs from the Dover Sun Park Project. Accordingly, the process for procuring SRECs from Tier 4 projects is not included in the initial pilot SREC Procurement Pilot Program.

¹²¹⁷ An Owner may, at its discretion, include additional solar arrays at other locations, in which case the capacity of such arrays will be aggregated for purposes of determining the capacity and tier of such project.

program (e.g., the allocation of SRECs among the different tiers) would be prospective only and executed SREC Transfer Agreements (as defined below) would not be affected. Any material changes to the 2013 SREC Procurement Pilot Program would be subject to approval by the appropriate regulatory bodies.

5. Bid Applications

5.1 General Requirements

Each Owner must submit, or designate its Owner Representative to submit, a completed bid application (and only one such bid application)¹³¹⁸ for each Generation Unit for which it intends to participate in the 2013 SREC Procurement Pilot Program. However, for New Systems that are an addition to or expansion of Existing Systems, a separate application may be submitted for both the New System and the Existing System provided that the New System has a separate meter from the Existing System installed in accordance with the requirements of Section 6.7. The application (the form of which is appended hereto as Appendix A) must include:

- a description of the Generation Unit, including its location, the types of solar panels being used and its nameplate rating (at STC);¹⁴¹⁹
- ~~a description of all supplemental funding from public sources (other than grants in lieu of investment tax credits) which the project has received, applied for or is or will be entitled to receive;~~
- ~~if the Owner is not qualified to submit an application on its own behalf or if the Owner otherwise elects to designate an Owner Representative, the identity of the Owner Representative; and~~
- designation of the GATS account (of the Owner or Owner Representative) into which the SRECs will be deposited.

In addition, each bid application must be accompanied by:

- ~~a standard form agreement (an "SREC Transfer Agreement") to sell SRECs to the SEU executed by the Owner and, if necessary or elected, an Owner Representative;~~

¹³¹⁸ A Generation Unit may not be included in more than one bid application in any single solicitation. If such unit is not awarded an SREC Transfer Agreement as a result of such solicitation, the Owner is free to submit an application for such unit pursuant to any future solicitation.

¹⁴¹⁹ The equipment description contained in the application is not binding on an Owner or an Owner Representative, provided that: (a) except as expressly permitted in accordance herewith, the nameplate rating (at STC) of any substitute equipment may not vary from that described in the original application by more than 5% for Tier 1 or Tier 2 projects, or 2.5% for Tier 3 projects; and (b) in no event will the substitution of different equipment affect the Estimated SREC Quantity contained in the original application.

- the appropriate deposit; and
- an analysis of the estimated annual energy output using PVWatts Solar PV Energy Calculator or such other modeling technique as may be acceptable to the SEU.

Once an Owner's bid is accepted, it must submit:

- a standard form agreement (an "SREC Transfer Agreement") to sell SRECs to the SEU executed by the Owner and, if necessary or elected, an Owner Representative.

5.2 Estimated Output

Each application to sell SRECs pursuant to the 2013 SREC Procurement Pilot Program must include a binding estimate of: (a) the annual energy output of the Eligible Energy Resource, as determined using PVWatts Solar PV Energy Calculator or such other modeling technique as may be acceptable to the SEU; and (b) the annual SREC production levels (such estimate of the SREC production levels, the "*Estimated SREC Quantity*"). The estimates for energy output and SREC production levels shall be subject to an annual degradation factor of 0.5%.

For Eligible Energy Resources claiming a bonus based on the use of Delaware-sourced equipment and/or an in-state workforce (as described in Section 2.3 above), the application must include a ~~description of the statement that it intends to qualify for the Delaware-sourced equipment and/or identification of the contractor or in-state workforce upon which such claim is based~~ bonus and the binding SREC output estimate for such resources should include any such SREC bonus.¹⁵²⁰ Failure to claim a bonus at the time an application is submitted will disqualify a project from being entitled to the bonus, regardless of whether Delaware-sourced equipment or an in-state workforce is later employed.

5.3 Bid Deposit

Each application to participate in the 2013 SREC Procurement Pilot Program must be accompanied by a bid deposit in an amount equal to \$100 per kW (DC) of the nameplate rating (at STC) of the Eligible Energy Resource; provided that the bid deposit will be waived for qualifying projects that provide a copy of their DPSC certification as an Eligible Energy Resource along with their bid application. All bid deposits must be

¹⁵²⁰ The "bonus" SRECs are not actually credited to retail electricity suppliers until they retire the SRECs to which the bonus applies. However, under the terms of the SREC Transfer Agreements, as long as the Owner provides evidence that the DPSC has certified that the Eligible Energy Resource qualifies for the bonus, payment for the SRECs will include the bonus amount.

in the form of an acceptable letter of credit, cash or a bid bond¹⁶²¹ and will be held by the SEU on behalf of the participating retail electricity suppliers.

The bid deposits will be returned or released promptly upon: (a) rejection of an application; or (b) termination of an SREC Transfer Agreement based on the imposition by the interconnecting utility of a charge other than a standard interconnection fee (as described in Section 6.4 below). In addition, if an Owner claims in its application that a project will be entitled to the Delaware Equipment Bonus or the Delaware Workforce Bonus and such project is not certified by the DPSC as being eligible for either such "claimed" bonus, the bid deposit will be forfeited and the SREC Transfer Agreement will be terminated. Otherwise, the bid deposit will be returned upon completion and commencement of operation of the Generation Unit on or prior to the Guaranteed On-Line Date (as defined in Section 6.5 below) and the posting of performance credit support (as described in Section 6.9 below). For Generation Units that commence operation after such date, the bid deposit will be used to pay delay liquidated damages (as described in Section 6.5 below) and the balance, if any, will be returned to the Owner promptly after the commencement of operation and the posting of performance credit support (as described in Section 6.9 below). Cash deposits will not earn interest.

6. SREC Transfer Agreements

In order to minimize transaction costs, the SEU will enter into standard form SREC Transfer Agreements with Owners and, if required or elected by such Owners, the Owner Representatives. The SEU will countersign each SREC Transfer Agreement promptly upon determining that the associated application and bid qualify for selection pursuant to the pending solicitation (the date of signing by the SEU, the "*Execution Date*"). Each SREC Transfer Agreement will include:

- the Owner's agreement to maintain the Generation Unit as an Eligible Energy Resource;
- an acknowledgment by the Owner and, if applicable, the Owner Representative that: (a) the SEU and retail electricity suppliers have the right to inspect the Generation Unit (which right may be assigned to qualified third parties); and (b) the SEU has the right to resell the SRECs in any market where they are eligible to be traded, including states other than Delaware; and

¹⁶²¹ A bid bond must be in the form of American Institute of Architects (AIA) Form 310. In addition, any applicant that provides a bid bond as bid security will be required to replace such bond with a deposit in the form of a letter of credit or cash no later than 10 days after the SEU provides notice that its bid application has been granted.

- if the Owner is designating an Owner Representative, the appointment of the Owner Representative as the Owner's exclusive agent to manage SRECs within GATS on the Owner's behalf.

The form of the SREC Transfer Agreement is appended hereto as Appendix B. Some of the principal terms and conditions of the SREC Transfer Agreement are described in this Section 6.

6.1 Term of Agreement

All SREC Transfer Agreements will have a term of 20 years. The term will commence as of the later of June 1, 2013 or the first day of the month following the date as of which the Generation Unit is certified as an Eligible Energy Resource by the DPSC ~~or, for operating resources, either June 1, 2011 or the first day of the month following the Execution Date of such agreement, as determined by the Owner.~~

6.2 SREC Quantity

Pursuant to each SREC Transfer Agreement, the Owner and, if applicable, the Owner Representative will be obligated to transfer (by registering within GATS) and sell to the SEU, and the SEU will be obligated to purchase and pay for, all of the SRECs produced at the Generation Unit up to the Contract Maximum (as defined below). To facilitate more efficient management and accounting for SREC procurement, and to maximize opportunities for the largest possible group of Owners to participate in the 2013 SREC Procurement Pilot Program, the quantity of SRECs that may be delivered pursuant to any SREC Transfer Agreement during any annual period will be limited to 110% of the Estimated SREC Quantity for such period (such amount, the "*Contract Maximum*"). All SRECs delivered pursuant to an SREC Transfer Agreement must be created based on the output of the Generation Unit that is the subject of that agreement. In the event a Tier N-1, Tier 2-A-N-2 or Tier 2-B-E-1 project produces SRECs in excess of the Contract Maximum, the SEU will have the option to elect whether or not to purchase any or all of the surplus SRECs. If it exercises that option, the sale of any such excess SRECs will be subject to the same terms, conditions and pricing applicable to other SREC purchases under the SREC Transfer Agreement. In the event a Tier 3-N-3 or Tier E-2 project produces SRECs in excess of the Contract Maximum, or if the SEU declines to purchase, or purchases only a portion of, the

excess SRECs produced by a Tier N-1, Tier ~~2-A-N-2~~ or Tier ~~2-B-E-1~~ project, the SEU will transfer any such excess SRECs back to the Owner, who will have the right to sell such excess SRECs in any manner it deems appropriate.

For Tier ~~3-N-3~~ and Tier E-2 projects that have a nameplate rating of 500 kW or greater, the Owner and, if applicable, the Owner Representative will be obligated to sell to the SEU, for each annual period, a quantity of SRECs equal to no less than 80% of the Estimated SREC Quantity for such period (the "*Minimum Annual Quantity*").

The Estimated SREC Quantity may not be amended unless the Owner reduces the capacity of a Generation Unit either to avoid or minimize any interconnection fees or charges sought to be imposed by the interconnecting utility (as described in Section 6.4) or to allow the Generation Unit to fit within a pending solicitation (as described in Sections 7.1 and 7.2).

6.3 Pricing

~~The Taskforce has established administratively set prices for Tier 1 and Tier 2-A projects. Those prices were set based on the assumption that each Owner of such a project will receive a GEP grant in an amount equal to that currently available to DPL customers (i.e., pursuant to the GEP in effect since December 10, 2010). Details of the current GEP grant program may be found at <http://www.dnrec.delaware.gov/energy/services/GreenEnergy/Pages/default.aspx>. For Tier 1 and Tier 2-A projects that have received or will receive GEP grants in excess of that amount, there is an alternate (i.e., reduced) price.¹⁷~~

~~Owners of Tier 2-B and Tier 3 projects are not eligible to receive administratively set prices and All New Systems and Existing Systems will be required to submit bids which will be evaluated and selected based on the lowest bid prices. Owners of Tier 1 and Tier 2-A projects may waive their right to receive administratively set prices, and instead, participate in competitive solicitations for Tier 2-B projects; provided~~

¹⁷ ~~Owners that have applied for, or are entitled to receive, any such excess grant amount may elect to forego such excess amount in order to be eligible for the standard administratively set price.~~

~~that a Tier 1 or Tier 2-A project that submits a bid in a Tier 2-B solicitation will be subject to the requirements imposed on other Tier 2-B projects, e.g., they cannot receive supplemental public funding other than grants in lieu of investment tax credits and they will be required to install revenue grade meters with on-line monitoring.~~ are required to submit bids only in their applicable Tier. For the 2013 SREC Procurement Program, the SREC price during the first 7 years of the term of the SREC Transfer Agreements will be the bid price, and the SREC price for the final 13 years of the SREC Transfer Agreements will be fixed at \$50 per SREC.

~~For projects selected in competitive solicitations the SREC price during the first 10 years of the term of the SREC Transfer Agreements will be the bid price. The SREC price for the final 10 years of the SREC Transfer Agreements will be fixed at \$50 per SREC.~~

6.4 Utility Interconnections

~~Each Owner must submit a complete If, based on an Owner's interconnection application (Step 1) to the interconnecting utility no later than 60 days after the Execution Date. If, based on that application, the interconnecting utility proposes to assess any fee or charge (other than a standard interconnection application fee), the Owner may, within 10 days of notice of such fee or charge by the interconnecting utility, either reduce the capacity of the Generation Unit to avoid or minimize such fee or charge or terminate the SREC Transfer Agreement. In order to take advantage of this right, each Owner must submit a complete interconnection application (Step 1) to the interconnecting utility no later than 120 days after the Execution Date.~~

If an Owner reduces the capacity of a Generation Unit to avoid or minimize an interconnection charge, the Estimated SREC Quantity will be reduced by the same percentage and any excess deposit will be returned to the Owner.¹⁸²² If an Owner elects to terminate the SREC Transfer Agreement based on the imposition of an interconnection fee or charge, the entire deposit will be returned.

¹⁸²² A reduction in capacity to avoid or minimize an interconnection charge will not affect pricing under the SREC Transfer Agreement, regardless of whether the reduced capacity would have qualified the project to submit an application for a lower tier.

6.5 Guaranteed On-Line Date; Delay Liquidated Damages

All projects must commence operation no later than 12 months after the Execution Date (the "Guaranteed On-Line Date"); provided that the Guaranteed On-Line Date will be subject to extension to the extent reasonably necessary based on: (a) events beyond the reasonable control of the Owner (*i.e.*, force majeure as defined in the SREC Transfer Agreement); or (b) the failure by the interconnecting utility to complete the interconnection (provided that the Owner or, if applicable, the Owner Representative shall have submitted a timely and complete interconnection application to the interconnecting utility). In no event will the Guaranteed On-Line Date be extended for more than one additional year.

For any Generation Unit that fails to meet its Guaranteed On-Line Date, the Owner and, if applicable, the Owner Representative will be liable to pay liquidated damages for each full or partial day of delay. The amount of such damages will be equal to 1/30th of the deposit amount. In the event a Generation Unit is not operational within 30 days of its Guaranteed On-Line Date, the SEU will have the right to terminate the SREC Transfer Agreement.

6.6 Payment

All Tier N-1, N-2 and E-1 projects ~~receiving administratively set prices~~ will be paid on a quarterly basis, and all other projects will be paid on a monthly basis. Each Owner will stipulate in the SREC Transfer Agreement whether payment is to be made to the Owner or, if applicable, the Owner Representative. Payment will be based on the number of SRECs transferred to and registered in the SEU's GATS account during the relevant billing period.

6.7 Metering

All Tier ~~1~~ projects ~~receiving administratively set prices~~ N-1, N-2, E-1 and E-2 Projects must install either a standard, utility-grade meter or a revenue-grade meter, in either case with on-line monitoring. All other projects must have a revenue-grade meter with on-line on site or revenue-grade online monitoring. All Tier N-3 Projects must install revenue-grade online monitoring.

6.8 Conditions Precedent

The SEU's purchase obligations under each SREC Transfer Agreement will be conditioned on: (a) the Owner providing evidence that it has received a certification number from the DPSC confirming that the referenced Generation Unit qualifies as an Eligible Energy Resource; and (b) for Generation Units that are eligible in accordance with GATS rules and procedures, the Owner executing a standing order directing that all SRECs generated by such unit (up to the Contract Maximum) be transferred to the SEU's GATS account. For projects claiming a bonus based on the use of Delaware-sourced equipment or an in-state workforce (as described in Section 2.3 above), the SEU's obligations will also be subject to delivery of confirmation from the DPSC that the resource qualifies for the claimed bonus (which confirmation may be delivered within 30 days of the commencement of operation of the resource).

6.9 Performance Credit Support

Pursuant to the terms of each SREC Transfer Agreement, the Owner and, if applicable, the Owner Representative, will grant the SEU a security interest in all of the SRECs (up to the Contract Maximum) generated by the project to secure their respective obligations under the agreements, including the obligation to deliver and sell the SREC output of the project.

To secure their obligations to deliver the Minimum Annual Quantity, Owners or Owner Representatives of Tier 3-N-3 or Tier E-2 projects with a nameplate rating of 500 kW or greater will also be required to provide supplemental credit support in the form of cash, a letter of credit or other collateral acceptable to the SEU. For each of the first ~~10~~ 7 years of the SREC Transfer Agreement, such supplemental credit support shall be in an amount equal to 5% of the value (at the applicable price set forth in the SREC Transfer Agreement) of the first-year Estimated SREC Quantity; for each year thereafter, it shall be in an amount equal to 10% of the value of the Estimated SREC Quantity for the ~~11th~~ 8th year of the agreement. The supplemental credit support must be replenished to the required level in the event any portion of the credit support is drawn or used.

6.10 Project Maintenance; Inspections

Owners and, if applicable, Owner Representatives will be responsible for maintaining Generation Units so that they remain Eligible Energy Resources and are able to produce their respective Estimated SREC

Quantities. Owners and Owner Representatives must notify the SEU of any substantive changes to the operational characteristics of the Generation Unit.¹⁹²³

The SEU will have the right to physically inspect Generation Units to verify compliance with the terms of their applicable SREC Transfer Agreements. The SEU may delegate that right to the SREC Procurement Agent, any retail electricity suppliers or any other qualified third parties.

6.11 Excused Performance

Owners will be excused from any delay in performance or failure to perform under an SREC Transfer Agreement caused by conditions beyond their reasonable control (*i.e.*, force majeure as defined in the SREC Transfer Agreement); provided that such relief shall be limited to the amount of time the condition exists that caused the delay but in no event greater than a period of one year for any single force majeure event.

6.12 Default Provisions

Pursuant to the SREC Transfer Agreement, the Owner and, if applicable, the Owner Representative will be in default if:

- the full SREC output of a Generation Unit (up to the Contact Maximum) is not made available to the SEU within the timeframe required;
- for a Tier 3-N-3 or Tier E-2 project with a nameplate rating of 500 kW or greater, the project fails to generate the Minimum Annual Quantity during any annual period and the Owner fails to pay applicable damages (as described in Section 6.13 below) within 30 days after the end of such annual period; or
- required credit support is not maintained.

In addition, an Owner Representative will be in default under an SREC Transfer Agreement if it fails to qualify as an Owner Representative under the terms of the 2013 SREC Procurement Pilot Program and such failure is not cured within 30 days of notice of such failure.

¹⁹²³ Owners and Owner Representatives are also required to provide the SEU with copies of any notice(s) submitted to the DPSC pursuant to 26 Del. Admin. C. § 3008(3.1.8) and any additional correspondence related to such notice(s).

6.13 Remedies

Upon a breach or default by an Owner or an Owner Representative under an SREC Transfer Agreement, the SEU will be entitled to all of its remedies at law and in equity, including specific performance of and/or termination of the agreement. Upon a breach or default by the SEU under an SREC Transfer Agreement, the Owner and, if applicable, the Owner Representative, will be entitled to their respective remedies at law and in equity. Equitable remedies will include specific performance of such agreement.

In the event the SEU terminates an SREC Transfer Agreement based on a failure or refusal to sell the SREC output of the Eligible Energy Resource to the SEU, the SEU may recover damages calculated based on the difference, if positive, between the price for SRECs under the SREC Transfer Agreement and the cost to replace such SRECs in the market.

If a Tier 3-N-3 or Tier E-2 project with a nameplate rating of 500 kW or greater fails to produce the Minimum Annual Quantity of SRECs during any annual period, the Owner will owe damages equal to the amount of the shortfall, multiplied by the difference, if positive, between: (a) the lower of the prevailing market price of SRECs (as reasonably determined by the SEU) or the amount of the "Alternative Compliance Payment" (as defined in REPSA) for the year in which such shortfall occurs; and (b) the price for SRECs under the SREC Transfer Agreement. Such damages shall be due and payable no later than 30 days after the end of the annual period to which they apply. Payment of such damages will be the Owner's sole liability for the failure to deliver the Minimum Annual Quantity.

6.14 Replacement of Owner Representative

An Owner may remove its Owner Representative at any time and for any reason (or no reason); ~~provided that if the Owner is not qualified to participate in the SREC Procurement Pilot Program on its own behalf, it will be obligated to designate a replacement Owner Representative (which replacement will accept a novation of the SREC Transfer Agreement) within 5 business days of the removal of the original Owner Representative. In the event an Owner who is not qualified to participate in the SREC Procurement Pilot Program on its own behalf fails to designate a replacement Owner Representative within such period, the SEU~~

~~will have the right to designate the replacement Owner Representative, in its reasonable in its sole and absolute discretion.~~

7. Bid Awards

Promptly upon receipt of an application to sell SRECs from an Owner Representative or Owner in response to a solicitation issued pursuant to the 2013 SREC Procurement Pilot Program, the SEU will review the application to verify whether it is complete and complies with applicable procedures. Partial or incomplete applications will be rejected.

7.1 Solicitations for Tier 1 and Tier 2 A Projects

~~A solicitation for Tier 1 or Tier 2 A projects will remain open until it is fully subscribed. All qualifying applications submitted pursuant to any such solicitation will be accepted for a period of 5 business days following the opening of such solicitation. If the total capacity of the Tier 1 or Tier 2 A projects received during such 5-day period is less than the allocation for such solicitation, all such applications will be accepted and SREC Transfer Agreements will continue to be awarded, on a "first come first serve" basis, until the applicable solicitation is fully subscribed.~~

~~If the total capacity of the Tier 1 or Tier 2 A projects received within 5 business days of the opening of the applicable solicitation exceeds the available allocation for such solicitation, a lottery will be conducted among those projects in the applicable solicitation that claimed the Delaware Equipment Bonus and the Delaware Workforce Bonus. Such lottery will continue until: (a) all such projects have been awarded SREC Transfer Agreements; (b) the applicable solicitation is fully subscribed or only a *de minimis* portion of such solicitation (as determined by the SEU) remains unsubscribed; or (c) a project is selected that would cause such solicitation to be oversubscribed.~~

~~If all of the Tier 1 and Tier 2 A projects in the lottery that claimed both the Delaware Equipment Bonus and the Delaware Workforce Bonus are awarded SREC Transfer Agreements and more than a *de minimis* amount of the applicable solicitation remains unsubscribed, a second lottery will be conducted among the remaining projects that claimed either such bonus. Such lottery will continue until: (a) all such projects have been awarded SREC Transfer Agreements; (b) the applicable solicitation is fully subscribed or only a *de*~~

~~minimis portion of such solicitation (as determined by the participating retail electricity suppliers) remains unsubscribed; or (c) a project is selected that would cause such solicitation to be oversubscribed.~~

~~Finally, if all of the Tier 1 and Tier 2 A projects in the lottery that claimed either the Delaware Equipment Bonus or the Delaware Workforce Bonus are awarded SREC Transfer Agreements and more than a *de minimis* amount of the applicable solicitation remains unsubscribed, a third lottery will be conducted among the remaining projects. Such lottery will continue until: (a) the applicable solicitation is fully subscribed or only a *de minimis* portion of such solicitation (as determined by the participating retail electricity suppliers) remains unsubscribed; or (b) a project is selected that would cause such solicitation to be oversubscribed.~~

~~If, at any time, a Tier 1 or Tier 2 A project is selected that would cause the applicable solicitation to be oversubscribed, the Owner submitting such application will have the option to reduce the capacity of the Generation Unit to equal the remaining balance of such solicitation. If the applicant elects not to reduce the capacity of the Generation Unit, that application will be rejected and the lottery will continue until such solicitation is fully subscribed or until only a *de minimis* portion of such solicitation (as determined by the participating retail electricity suppliers) remains unsubscribed.~~

7.1 7.2 Competitive Solicitations

~~All Tier 2 B and Tier 3 projects will be required to submit price bids in competitive solicitations. In addition, Tier 1 and Tier 2 A projects may waive their right to receive an administratively set price, and instead, elect to participate in a competitive solicitation for Tier 2 B projects, provided they (a) waive their right to receive any GEP grant or other supplemental public funding other than grants in lieu of investment tax credits,²⁰ and (b) comply with the requirements and conditions applicable to Tier 2 B projects. A given system is only allowed to bid into one auction and one tier per year.~~

~~The price bid for each project participating in a competitive solicitation must be for a fixed dollar amount, which amount cannot escalate or otherwise vary during the initial 10-year 7-year period of the term.~~

²⁰ ~~Owners of Tier 1 and Tier 2 A projects that have applied for, or are entitled to receive, GEP grants and desire to participate in a solicitation for Tier 2 B projects may elect to forego receipt of such grants in order to qualify to submit a price bid in such a competitive solicitation for Tier 2 B projects.~~

The SEU will award SREC Transfer Agreements to such projects with the lowest price bids in each solicitation; ~~provided that the SEU will not accept any bids in excess of \$280 per SREC.~~ The SEU may select an Owner in any lower Tier (i.e. N-2 or E-1) to fill the requirements of any higher Tier (i.e. N-3 or E-2) subject to certain limitations. For Tier N-1, 30% of the total procurement must be awarded to Owners submitting bids in Tier N-1. For Tier N-2, at least 35% of the total procurement must be awarded to Owners submitting bids in Tier N-2. For Tier E-1 at least 50% of the total procurement must be awarded to Owners submitting bids in E-1. Provided these stated minimums are met, the SEU will accept for each Tier the lowest bid prices.

If a ~~Tier 2-B or Tier 3~~ tier allocation is not fully subscribed in the initial solicitation, a second solicitation ~~will~~ may be held within the following six months for the balance of the allocation for such tier. The SEU will announce all solicitations for competitively priced bids at least 30 days in advance of the bid date.

7.2 7.3 Bidding Ties

If there are multiple bids at the same price that would cause a competitive solicitation to be oversubscribed (a "**Bidding Tie**"), the SEU will give each applicant involved in the Bidding Tie for such tier a 5-day period to reduce its price bid and will then evaluate any revised bids submitted by the applicants involved in such Bidding Tie. The SEU will then award one or more SREC Transfer Agreements to some or all of the applicants involved in such Bidding Tie as follows:

- first, if any such applicant submits a reduced price bid, to such applicant(s) on the basis of the lowest price bid until: (a) the pending solicitation is fully subscribed or only a *de minimis* portion of such solicitation (as determined by the participating retail electricity suppliers) remains unsubscribed; (b) the next highest price bid would cause the pending solicitation to be oversubscribed; or (c) there is a Bidding Tie with respect to the remaining bids; and
- second, if after completion of the first step, the pending solicitation is not fully subscribed and there is a Bidding Tie with respect to the remaining bids, the SEU will award SREC Transfer Agreements based on a lottery among the remaining applicants involved in such Bidding Tie that claimed the Delaware Equipment Bonus and the Delaware Workforce Bonus;
- ~~third, if after completion of the second step, the pending solicitation is not fully subscribed and there is a Bidding Tie with respect to the remaining bids, the SEU will award SREC Transfer Agreements based on a lottery among the remaining applicants involved in such Bidding Tie that claimed either the Delaware Equipment Bonus or the Delaware Workforce Bonus; and~~

- ~~fourth, if after completion of the third step, the pending solicitation is not fully subscribed and there is a Bidding Tie with respect to the remaining bids, the SEU will award SREC Transfer Agreements based on a lottery among the remaining applicants.~~

If a project selected based on bid price or by lottery would cause the pending solicitation to be oversubscribed, the SEU will give the applicant the option to reduce the capacity of the Generation Unit to the remaining balance of the pending solicitation. If the applicant elects not to reduce the capacity of the Generation Unit, its bid application will be rejected and the solicitation will continue until: ~~(a) the pending solicitation is fully subscribed or only a *de minimis* portion of the solicitation (as determined by the participating retail electricity suppliers) remains unsubscribed; or (b) there are no remaining applications with a bid price below \$280 per SREC.~~ If the applicant elects to reduce the capacity of the Generation Unit so that it fits within a pending solicitation, the Estimated SREC Quantity will be reduced by an equal percentage. In addition, if such reduction qualifies the project for a lower tier, the original form of SREC Transfer Agreement will be terminated and replaced with the form of agreement applicable to the lower tier. In such case, the reduced capacity of the Generation Unit will be reallocated from the tier originally bid to such lower tier and any excess deposit will be returned to the Owner.

Partial fill systems will be allowed to bid the rest of the system in future procurements, but the second bid will have to be in a tier size that reflects the cumulative system size. Systems that obtain multiple bids will first transfer SRECs at the lowest price each year.

For system additions, the bid must be in a tier size that reflects the cumulative system size. Systems that obtain multiple bids will first transfer SRECs at the lowest price each year.

8. Solicitation for 2011-2013 Compliance Year

8.1 Resource Allocation

Based on forecasted load, the SREC solicitations for the ~~2011-2013~~ compliance year will be for ~~11,472~~ 8,000 SRECs,²¹ which will be allocated as follows:

- ~~Tier 1 2,972 SRECs~~

²¹ ~~In addition to the SRECs being solicited through the SREC Procurement Pilot Program, Delmarva has already contracted to purchase 9,846 Tier 4 SRECs from the Dover Sun Park Project, of which 2,846 are being utilized for the 2011 compliance year.~~

- Tier 2 A — 2,000 New Systems - 4,000 SRECs

- Tier 2 B — 2,000 N-1 - 1,200 SREC²²s

- Tier 3 — 4,500 N-2 - 1,400 SRECs

8.2 Pricing

The Taskforce has established administratively set prices for Tier 1 and Tier 2 A projects for the 2011 solicitation that it believes will encourage development of new solar generating resources while taking into account reasonable project development costs (as such costs may be off set by available grants, subsidies and tax benefits). The pricing set forth herein was established based on assumptions developed by the Taskforce and by utilizing PV Planner software.²³

The administratively set prices established for the SREC Procurement Pilot Program are as follows:

- Tier N-3 - 1,400 SRECs

Existing Systems - 3,000 SRECs

- Tier E-1 - 1,500 SRECs

PRICING

<i>Project</i>	<i>Base Price</i>		<i>Alternate Price</i>	
	<i>Years 1-10</i>	<i>Years 11-20</i>	<i>Years 1-10</i>	<i>Years 11-20</i>
Tier 1	\$260 per SREC	\$50 per SREC	\$235 per SREC	\$50 per SREC
Tier 2-A	\$240 per SREC	\$50 per SREC	\$175 per SREC	\$50 per SREC

- Tier E-2 - 1,500 SRECs

Spot Market Purchases - 1,000 SRECs

Delmarva Power may procure a portion of its requirement, approximately 1,000 SRECs, through the spot market. The size of the spot market purchases should be consistent with a portfolio approach of short term and long term purchases. The spot market procurement will be open to all systems, and Delmarva Power will procure short-term contracts in a similar manner to its current practices.

²² The anticipated SREC supply from any Tier 1 and Tier 2 A projects selected in a solicitation for a Tier 2 B project will be counted as part of the Tier 2 B allocation.

²³ PV Planner software has been developed over a 16 year period by the Center for Energy and Environmental Policy in consultation with the U.S. National Renewable Energy Laboratory and others. It utilizes meteorological data to forecast PV cell output and incorporates a vast quantity of data to model financial performance of solar generation units.

SEU Use Only

Application Number: _____
Bid Date: _____
Intake Personnel: _____
Application Complete: Yes/No

APPENDIX A
Form of Bid Application

APPLICATION
to sell
SOLAR RENEWABLE ENERGY CREDITS
2011-2013 SREC PROCUREMENT PILOT PROGRAM

This is an application to sell solar renewable energy credits ("SRECs") to the Delaware Sustainable Energy Utility, Inc. (the "SEU") pursuant to a ~~pilot~~-procurement program for the 2011-2013 compliance year established in accordance with the Delaware Renewable Energy Portfolio Standards Act (as amended, "REPSA").

Owner Information¹

Name (company or individual): _____
Street address: _____
City, state and zip code: _____
Email address: _____
GATS Account No.:² _____
Other Eligible Energy Resources
owned by Owner:³ _____

Owner Representative Information (to be filled in if applicable)²⁷

Name (company or individual): _____
Street address: _____
City, state and zip code: _____
Email address: _____
GATS Account No.: _____
Other Eligible Energy Resources
owned by Owner Representative: _____

¹ The designated Owner must be the legal entity that owns, leases, controls or is the direct assignee of all of the SRECs created by the Project described in this Application.

² Not required if an Owner Representative is designated or if construction of Project is not complete.

³ Not required if an Owner Representative is designated.

²⁷ ~~An Owner Representative must be designated unless: (a) the Project has an aggregate nameplate rating (as designated by the solar module manufacturer) of at least 100 kW (DC) at STC; or (b) the Owner has executed agreements to control the SRECs produced by at least one other Eligible Energy Resource.~~

Description of Project

Location: _____
(street address or parcel number)

City, state and zip code: _____

Nameplate capacity (kW-DC)²⁸⁴ _____

Tier designation (check one):

- Tier N-1 Project (New system, less than or equal to 50-30 kW-DC)
- Tier ~~2-A~~ N-2 Project (New system, greater than 50-30 kW and less than or equal to 250-200 kW-DC)
- Tier ~~2-B~~ N-3 Project (New system, greater than 250-200 kW and less than or equal to 500 kW-DC) less than or equal to 2,000 kW-DC
- Tier E-1 Project (Existing system, less than or equal to 30 kW-DC)
- Tier ~~3-E~~ E-2 Project (Existing system, greater than 500-30 kW and less than or equal to 2,000 kW-DC)

Module type (make and model): _____

Inverter type (make and model): _____

System tilt (degrees): _____

System azimuth (degrees): _____

Mounting location (specify one):

- Ground
- Rooftop

Operational status (check one):

- Project currently under development
- Project currently in operation
Specify initial operation date: _____

Estimated energy and SREC output:

First-year energy output: _____ kWh (exclusive of any bonuses described below)

First-year SREC output: _____ SRECs (exclusive of any bonuses described below)

Utility interconnection:

_____ Interconnecting Utility

²⁸⁴ At standard test conditions (internal cell temperature of 25°C and irradiance of 1,000 watts per square meter with air mass 1.5 spectrum).

_____ Date of acceptance of completed System Interconnection Application

Required Information

Supplemental funding from public sources²⁹⁵ (provide information for any funding applied for, awarded and/or received):

Delaware Green Energy Program Grant
Application Date: _____
Utility: _____
Award Date: _____
Amount: _____

Other public supplemental funding (provide additional sheet if necessary)
Source: _____
Application Date: _____
Award Date: _____
Amount: _____

Eligibility for Delaware Equipment Bonus (check if applicable):

The Project is sited in the State of Delaware and a minimum of 50% of the total cost of renewable energy equipment, inclusive of mounting components, is manufactured in Delaware³⁰⁶

Eligibility for Delaware Workforce Bonus (check if applicable):

The Project is sited in the State of Delaware and is or will be constructed and/or installed either with a workforce at least 75% of whom are Delaware residents or by a company that employs at least 75% Delaware residents³¹⁷

Price Bid:³² \$ _____ per SREC (applicable during first ~~10~~ 7 years)

~~[For any Owner of a Tier 1 or Tier 2 A project submitting a price bid]THE UNDERSIGNED HEREBY ACKNOWLEDGES THAT BY SUBMITTING THE PRICE BID SET FORTH ABOVE, THIS APPLICATION WILL BE EVALUATED ON A COMPETITIVE BASIS WITH OTHER PRICE BIDS AND THAT IT WILL BE DEEMED TO HAVE WAIVED ANY AND ALL RIGHTS IT MAY HAVE PURSUANT TO THE 2011 SREC PROCUREMENT PILOT PROGRAM TO RECEIVE AN ADMINISTRATIVELY SET PRICE FOR SRECS GENERATED BY THE PROJECT.~~

Owner

Print:

THE UNDERSIGNED HEREBY CERTIFIES THAT: (A) IT IS THE OWNER IDENTIFIED HEREIN; (B) THIS IS THE ONLY APPLICATION BEING SUBMITTED PURSUANT TO THE ~~2011-2013~~ SREC PROCUREMENT PILOT PROGRAM THAT INCLUDES THE PROJECT DESCRIBED HEREIN; (C) THE INFORMATION SET FORTH IN THIS APPLICATION IS TRUE, ACCURATE AND COMPLETE; AND (D) IT HAS FULLY, COMPLETELY AND ACCURATELY IDENTIFIED ALL SUPPLEMENTAL FUNDING FROM PUBLIC SOURCES (OTHER THAN GRANTS IN LIEU OF INVESTMENT TAX CREDITS) FOR WHICH IT HAS APPLIED OR WHICH IT HAS BEEN AWARDED OR RECEIVED.

²⁹⁵ Excluding any grants in lieu of investment tax credits.
³⁰⁶ Eligibility for the Delaware Equipment Bonus shall be determined solely by the DPSC.
³¹⁷ Eligibility for the Delaware Workforce Bonus shall be determined solely by the DPSC.
³² ~~For all Tier 2 B and Tier 3 Projects and for any Tier 1 and Tier 2 A Projects that have elected to waive their right to receive an administratively set price.~~

Owner

Print: _____

Attachments

Completed SREC Transfer Agreement executed by Owner and, if applicable, Owner Representative

Deposit in the amount of \$100/kW of the nameplate rating of the Project

Calculation of the estimated first-year energy output using PVWatts Solar PV Energy Calculator or other modeling technique acceptable to the SEU (using actual tilt and orientation)

APPENDIX B

Form of SREC Transfer Agreement

**SOLAR RENEWABLE ENERGY CREDIT
TRANSFER AGREEMENT**

DELAWARE RENEWABLE ENERGY PORTFOLIO STANDARDS ACT

2011 PILOT-2013 SREC PROCUREMENT PROGRAM

**SOLAR RENEWABLE ENERGY CREDIT TRANSFER AGREEMENT
DELAWARE RENEWABLE ENERGY PROGRAM**

2011 PILOT-2013 SREC PROCUREMENT PROGRAM

TABLE OF CONTENTS

PART I PROJECT AND OWNER INFORMATION.....	1
PART II TERMS AND CONDITIONS	4
Section 2.1 <u>Purchase and Sale of SRECs</u>	4
Section 2.2 <u>Operational Matters</u>	5
Section 2.3 <u>Conditions</u>	67
Section 2.4 <u>Purchase Price and Payment Terms</u>	7
Section 2.5 <u>Completion Guarantee</u>	9
Section 2.6 <u>Representations, Warranties and Acknowledgements</u>	9
Section 2.7 <u>Change in Estimated SREC Quantity</u> ..	11
Section 2.8 <u>Default And Remedies</u>	11
Section 2.9 <u>Force Majeure</u>	1314
PART III OWNER REPRESENTATIVE	15
Section 3.1 <u>Agency Appointment</u>	15
Section 3.2 <u>Agency Responsibility</u>	15
Section 3.3 <u>Termination or Replacement of Owner Representative</u>	1415
Section 3.4 <u>Representations and Warranties of Owner Representative</u>	16
Section 3.5 <u>Continuing Eligibility</u>	17
PART IV MINIMUM ANNUAL QUANTITY	17
Section 4.1 <u>Guaranteed Quantity</u>	17
Section 4.2 <u>Supplemental Credit Support</u>	1618
PART V CREDIT SUPPORT	18
Section 5.1 <u>Bid Deposit</u>	18
Section 5.2 <u>Security Interest</u>	1718
PART VI DEFINITIONS; RULES OF CONSTRUCTION	1819
Section 6.1 <u>Definitions</u>	1819
Section 6.2 <u>Rules of Construction</u>	2224
PART VII GENERAL PROVISIONS.....	2325
Section 7.1 <u>Notices</u>	2325
Section 7.2 <u>Governing Law</u>	2325
Section 7.3 <u>Dispute Resolution</u>	2425
Section 7.4 <u>Jurisdiction and Venue</u>	2425
Section 7.5 <u>Service of Process</u>	2425
Section 7.6 <u>Waiver of Right to Jury Trial</u>	2426
Section 7.7 <u>Records</u>	2426
Section 7.8 <u>Assignment</u>	26
Section 7.9 <u>Delay and Waiver</u>	2526
Section 7.10 <u>Relationship of the Parties</u>	2527
Section 7.11 <u>Survival of Obligations</u>	2527
Section 7.12 <u>Severability</u>	27
Section 7.13 <u>Entire Agreement</u>	2627
Section 7.14 <u>Amendments</u>	27

Section <u>7.15</u> <u>Headings</u> <u>26</u> <u>7.14</u>	<u>Amendments</u>	27
Section <u>7.15</u> <u>Headings</u>		27
Section <u>7.16</u> <u>Counterparts</u>		2627

**SOLAR RENEWABLE ENERGY CREDIT TRANSFER AGREEMENT
DELAWARE RENEWABLE ENERGY PROGRAM**

2011 PILOT-2013 SREC PROCUREMENT PROGRAM

This Agreement, made this _____ day of _____, pertains to the sale and transfer by the Owner (as identified below) of solar renewable energy credits created by a solar power project (as described in more detail below, the "*Project*")³³¹ to SEU One, LLC (or any successor organization thereto, the "*SEU*").

**PART I
PROJECT AND OWNER INFORMATION**

A. Owner:³⁴²

- Name of entity: _____
- Street address: _____
- City, state and zip code: _____
- Attention: _____
- Email address: _____
- Tax ID number: _____
- Owner's other Eligible Energy Resources:³⁵³ _____
- Owner GATS Account No.:³⁶⁴ _____

B. Owner Representative (if one is designated):³⁷

- Name of entity: _____
- Street address: _____

³³¹ A Project may be located at multiple locations, provided that the same legal entity owns, leases, controls or is the direct assignee of all of the SRECs created by the entire Project.

³⁴² The Owner is the legal entity that owns, leases, controls or is the direct assignee of all of the SRECs created by the Project.

³⁵³ Required only if: (a) the Project has a nameplate capacity of less than 100 kW; and (b) no Owner Representative is designated.

³⁶⁴ If the Owner has not established a GATS account as of the Bid Date, it must provide the SEU with such account number promptly after the account is established.

³⁷ ~~The Owner must designate an Owner Representative unless: (a) the Project has an aggregate nameplate rating (as designated by the solar module manufacturer) of at least 100 kW (DC) at STC; or (b) such Owner has executed agreements to control the SRECs produced by at least one other Eligible Energy Resource.~~

- City, state and zip code: _____
- Attention: _____
- Email address: _____
- Tax ID number: _____
- Other Eligible Energy Resources: _____

C. Payee (check one):

- Owner
- Owner Representative

D. Project:

- Street address:³⁸⁵ _____
(or parcel number if property does not have street address)
- City, state and zip code: _____
- Nameplate capacity: _____ kW³⁹⁶
- Tier designation (check one):
 - Tier N-1 Project (New system, less than or equal to 50 kW~~30 kW-DC~~)
 - Tier N-2 Project (New system, greater than 50-30 kW and less than or equal to 500 kW~~200 kW-DC~~)⁴⁰
 - Tier 2-AN-3 Project (New system, greater than 50-200 kW and less than or equal to 250 kW~~2,000 kW-DC~~)
 - Tier 2-BE-1 Project (greater than 250 kW and Existing system, less than or equal to 500 kW~~30 kW-DC~~)
 - Tier 3-E-2 Project (Existing system, greater than 500-30 kW and less than or equal to 2,000 kW~~-DC~~)
- Operational status (check one):

³⁸⁵ If the Project is located at multiple locations, the street address or parcel number for each location must be provided. A separate page may be attached if necessary.

³⁹⁶ All capacity (kW) references are to the nameplate rating of the Generation Unit (DC at STC), as designated by the solar module manufacturer.

⁴⁰ Each Tier 2 Project must designate whether it is a Tier 2-A or Tier 2-B Project.

- Project under development as of Bid Date
- Operation Date has occurred as of Bid Date
Operation Date: _____

• Commencement Date (check one):

- June 1, 2011_____
- First day of the month following Execution Date

• Utility interconnection:

_____ Interconnecting Utility

• Supplemental funding from public sources (check if applicable):⁴¹⁷

- Delaware Green Energy Program Grant
Utility _____
Amount: _____
- Other grants from public sources (excluding grants in lieu of investment tax credits)
Amount and type: _____
Source: _____

• SREC credits (check if applicable):

- The Project qualifies for a 10% credit on SREC output (if applicable, the "**Delaware Equipment Bonus**") because the Project is sited in the State of Delaware and a minimum of 50% of the cost of renewable energy equipment, inclusive of mounting components, is manufactured in Delaware.
- The Project qualifies for a 10% credit on SREC output (if applicable, the "**Delaware Workforce Bonus**") because the Project is sited in the State of Delaware and is or will be constructed and/or installed either with a workforce at least 75% of whom are Delaware residents or by a company that employs at least 75% Delaware residents.

• Energy and SREC output

Estimated first-year total energy output: _____ kWh (exclusive of any bonuses described below)⁴²⁸

⁴¹⁷ If the Project has received a Delaware Green Energy Program Grant, the Owner shall deliver a copy of the grant award simultaneously with this Agreement.

Estimated first-year total SREC output _____ SRECs (exclusive of any bonuses described below)

Delaware Equipment Bonus: _____ SRECs
(10% of total SREC output, if applicable)

Delaware Workforce Bonus: _____ SRECs
(10% of total SREC output, if applicable)

Estimated SREC Quantity (first-year): _____ SRECs

E. Bid information:

- Date of receipt of Owner's application: _____
[To be filled in by the SEU]
- Bid Price: \$ _____ / SREC (for first ~~10~~ 7 Contract Years)
[To be filled in for all Tier 2-B and Tier 3 Projects and for any Tier 1 and Tier 2-A Projects that have waived their right to receive an administratively set price]

**PART II
TERMS AND CONDITIONS**

Section 2.1 Purchase and Sale of SRECs.

2.1.1 Sale. The Owner agrees to sell and deliver to the SEU all SRECs created by the Project (the "**Project SRECs**"), up to the Maximum Annual Quantity. The sale and delivery of SRECs pursuant to this Agreement shall be deemed to occur in the State of Delaware. The Owner acknowledges and agrees that the SEU intends to resell the Project SRECs to retail electric suppliers in Delaware.

2.1.2 Excess SRECs.

- (a) If a Tier ~~1-N-1 or N-2~~ Project or a Tier ~~2-E-1~~ Project creates any Excess Amount during any Contract Year, the SEU shall, no later than 30 days after the end of such Contract Year, notify the Owner whether or not it will purchase all or any portion of such Excess Amount. Failure by the SEU to notify the Owner of such election within such time period shall be deemed an election by the SEU to not purchase the Excess Amount or any portion thereof for such Contract Year. In the event that the SEU does not purchase any portion of the Excess Amount created by a Tier ~~1-N-1 or N-2~~ Project or a Tier ~~2-E-1~~ Project for any Contract Year and such SRECs were transferred to the GATS account of the SEU, the SEU shall promptly

⁴²⁸ An analysis of the estimated first-year energy output using PVWatts Solar PV Energy Calculator or other modeling technique acceptable to the SEU is attached as Exhibit A hereto.

re-transfer such SRECs to the GATS account of the Owner or, if one is designated, the Owner Representative.

- (b) If a Tier 3-N-3 Project or Tier E-2 Project creates any Excess Amount during any Contract Year: (a) the SEU shall have no right to purchase any such Excess Amount; (b) the Owner shall be free to use or sell such SRECs as it deems appropriate; and (c) if any such SRECs were transferred to the GATS account of the SEU, the SEU shall promptly re-transfer such SRECs to the GATS account of the Owner or, if one is designated, the Owner Representative.

2.1.3 GATS Registration. The Owner or, if one is designated, the Owner Representative, shall be responsible for transferring the Project SRECs to the SEU by registering such SRECs in the GATS account of the SEU. If PJM will accept an irrevocable standing order from the Owner directing that all Project SRECs be transferred automatically to the GATS account of the SEU, the Owner shall execute such an order, in a form acceptable to the SEU. If PJM will not accept an irrevocable standing order from the Owner, but will accept a revocable standing order directing that all Project SRECs be transferred automatically to the GATS account of the SEU, the Owner shall execute such an order, in a form acceptable to the SEU.

2.1.4 Term of Purchase.

- (a) If the Operation Date of the Project did not occur prior to the Bid Date, the SEU's obligation to purchase SRECs shall commence as of the later of June 1, 2013, or the first day of the month after the Project is certified as an Eligible Energy Resource by the DPSC.
- (b) If the Operation Date of the Project occurred prior to the Bid Date, the SEU's obligation to purchase SRECs shall commence as of June 1, 2014 ~~or the first day of the month following the Execution Date, as specified in Paragraph D of Part I2013.~~
- (c) The SEU's obligation to purchase SRECs shall continue for a period of 20 years after the Commencement Date.

2.1.5 Project SRECs. The Owner shall not be entitled to transfer or sell any SRECs other than Project SRECs pursuant to this Agreement. All Project SRECs shall be free and clear of any liens, taxes, claims, security interests or other encumbrances other than as provided for in Section 5.2.

Section 2.2 Operational Matters.

2.2.1 Interconnection.

- (a) The Owner shall be solely responsible for interconnecting the Project to the electric transmission or distribution system of the Interconnecting

Utility. ~~The~~ In order to invoke its rights under this Section 2.2.1 (b)-(d) the Owner shall submit a complete interconnection application (Step 1) to the Interconnecting Utility no later than ~~60~~ 120 days after the Execution Date.

- (b) If the Interconnecting Utility notifies the Owner that there will be a fee or charge (other than a standard interconnection application fee) required to interconnect the Project, the Owner may, within 10 days of such notice, elect to: (i) reduce the capacity of the Project to avoid or minimize such fee or charge; or (ii) terminate this Agreement.
- (c) If the Owner elects to reduce the capacity of the Project pursuant to Section 2.2.1(b), it shall provide the SEU with written notice specifying the reduced nameplate capacity of the Project and upon such election, the Estimated SREC Quantity (first year) shall be deemed to be reduced by the same percentage as the reduction in the nameplate capacity. Promptly upon receipt of such election, the SEU shall return or release any excess Bid Deposit to the Owner.
- (d) If the Owner elects to terminate this Agreement pursuant to Section 2.2.1(b), it shall provide the SEU with written notice of termination and promptly upon receipt of such election, the SEU shall return or release the entire Bid Deposit to the Owner.

2.2.2 Project Development. Unless the Project is operational as of the Execution Date, the Owner shall exercise all commercially reasonable efforts to complete construction of the Project, including obtaining all approvals of Governmental Authorities required in connection therewith.

2.2.3 Operation and Maintenance. The Owner shall operate and maintain the Project to ensure that it remains qualified as an Eligible Energy Resource at all times during the term of this Agreement.

2.2.4 Changes to Operational Characteristics. The Owner and, if one is designated, the Owner Representative, shall promptly notify the SEU of any substantive changes to the operational characteristics of the Project, including providing the SREC Procurements Administrator with copies of any notices submitted to the DPSC pursuant to 26 Del. Admin C. § 3008(3.1.8) and any correspondence relating to any such notices.

2.2.5 Metering. The Owner shall: (a) install, operate, maintain and calibrate (as necessary) the Required Meter for the Project; (b) provide the SEU with a detailed description of the Required Meter (including meter ID, pulse radio, channels, etc., if any); (c) provide not less than 10 days advance notice of any testing or calibration of the Required Meter; and (d) deliver to the SEU copies of all test results of Required Meters promptly upon the completion of any such test. The SEU shall have the right to test any

Required Meter and, if such meter is determined to be operating outside industry standards, to require the Owner to re-calibrate such meter, at the Owner's cost.

2.2.6 Inspection. The Owner shall permit the SEU and its designees to inspect the Project at any time during normal business hours to verify the Owner's compliance with the terms of this Agreement; *provided, however*, that the Owner shall not be responsible for the cost of any such inspection.

Section 2.3 Conditions.

2.3.1 Certification as an Eligible Energy Resource. The SEU's obligation to purchase Project SRECs is subject to the Project being certified as an Eligible Energy Resource by the DPSC.

2.3.2 Approval to Operate. The SEU's obligation to purchase Project SRECs is subject to the Owner's receipt of an approval to operate the Project from the Interconnecting Utility.

2.3.3 GATS Registration. The SEU's obligation to purchase Project SRECs is subject to the Owner's establishment of a GATS account.

2.3.4 Certifications. the Owner shall deliver to the SEU, promptly upon receipt thereof: (a) a copy of the DPSC certification of the Project as an Eligible Energy Resource; (b) a copy of the approval to operate the Project issued by the Interconnecting Utility; and (c) the Owner's GATS account number and a copy of the Owner's GATS registration. If the Project is designated as being eligible for the Delaware Equipment Bonus and/or the Delaware Workforce Bonus in Part I, the Owner shall provide the SEU with a copy of the DPSC certification that the Project qualifies for such credit(s) no later than 30 days after the Operation Date.

Section 2.4 Purchase Price and Payment Terms.

2.4.1 Purchase Price.

<i>Project</i>	<i>Base Price</i>	<i>Alternate Price</i>
Tier 1	\$260 per SREC	\$235 per SREC
Tier 2-A	\$240 per SREC	\$175 per SREC

(a) ~~For Tier 1 and Tier 2-A Projects (excluding any such Projects whose Owners have waived their right to receive an administratively set price), the The Purchase Price for Project SRECs created during Contract Years 1 through 10 will be: (a) for any Project that receives a Delaware Green Energy Program grant in excess of the amount available to DPL customers~~

~~pursuant to the program in effect since December 10, 2010, the Alternate Price (as set forth in the table below); and (b) for any other such Project, the Base Price (as set forth in the table below). 7 will be the bid price set forth in the application submitted for such Project, as such bid price may be amended pursuant to the rules established by the SEU.~~

~~(b) For Tier 1 and Tier 2-A Projects whose Owners have waived their right to receive an administratively set price and Tier 2-B and Tier 3 Projects, the Purchase Price for Project SRECs created during Contract Years 1 through 10 will be the bid price set forth in the application submitted for such Project, as such bid price may be amended pursuant to the rules established by the SEU.~~

~~(b)~~ (e) For all Projects, the Purchase Price for Project SRECs created during Contract Years ~~11-8~~ through 20 shall be \$50 per SREC.

2.4.2 SREC Bonus. If the Delaware Equipment Bonus or the Delaware Workforce Bonus is specified in Part I and the DPSC certifies that the Project qualifies for either such bonus, payment of the Purchase Price will be based on the number of Project SRECs plus an additional 10%. If the Delaware Equipment Bonus and the Delaware Workforce Bonus is specified in Part I and the DPSC certifies that the Project qualifies for both such bonuses, payment of the Purchase Price will be based on the number of Project SRECs plus an additional 20%.

2.4.3 Payment. Subject to the limitations set forth in this Agreement: (a) for all Tier N-1, N-2 and E-1 Projects ~~that receive the base price or alternate price set forth in the table included in Section 2.4.1(a)~~, the SEU shall pay the Payee for Project SRECs no later than twenty-five (25) days after the end of the calendar quarter in which such SRECs were originally registered in the GATS account of the SEU; and (b) for all other Projects, the SEU shall pay the Payee for Project SRECs no later than thirty (30) days after the end of the calendar month in which such SRECs were originally registered in the GATS account of the SEU. The Program Administrator shall have the right to make payments hereunder by wire transfer. In the event the Program Administrator elects to make payment by wire transfer, Owner shall be responsible for providing the Program Administrator with account information and wiring instructions to facilitate such transfers.

2.4.4 Limitations.

(a) The SEU shall not be obligated to pay for any SRECs in excess of the sum of: (i) the Maximum Annual Quantity; plus (ii) if applicable, any portion of the Excess Amount which it has elected to purchase pursuant to Section 2.1.2(a).

- (b) The SEU may withhold payment of any amounts disputed in good faith.

2.4.5 Payment Errors. In the event that any Party becomes aware of any payment error (whether such error was in the form of an underpayment or overpayment), such Party shall notify the other Parties in writing of such error and the Party required to make payment shall do so within thirty (30) days of such notification; *provided, however*, that no payment adjustment shall be required unless the foregoing notice is delivered within eleven (11) months of the date of the original payment.

Section 2.5 Completion Guarantee.

2.5.1 Guaranteed On-Line Date. The Owner shall cause the Operation Date to occur no later than the date which is 365 days after the Execution Date (such date, the "Guaranteed On-Line Date"), *provided, however*, that the Guaranteed On-Line Date shall be extended for up to 365 days due to: (a) a Force Majeure event; or (b) the failure by the Interconnecting Utility to complete the interconnection after the Owner submits a timely and complete interconnection application in accordance with Section 2.2.1.

2.5.2 Damages for Delayed Operation Date.

- (a) If the Operation Date does not occur by the Guaranteed On-Line Date, the Owner shall pay to the SEU, and if such amount is not paid, the SEU shall be entitled to draw against the Bid Deposit, an amount equal to 1/30 of the original Bid Deposit amount for each day (or portion thereof) of such delay, for up to 30 days of delay.
- (b) If the Operation Date does not occur by the date which is 31 days after the Guaranteed On-Line Date, the SEU shall have the right to terminate this Agreement.
- (c) The remedies set forth in Sections 2.5.2(a) and 2.5.2(b) shall be the Owner's exclusive liability based on a delay in achieving or a failure to achieve the Operation Date by the Guaranteed On-Line Date.
- (d) The Owner acknowledges and agrees that: (i) the SRECs being purchased by the SEU are for the benefit of certain retail electric suppliers operating in the State of Delaware; (ii) in the event the Operation Date does not occur by the Guaranteed On-Line Date, the damages to be suffered by the SEU and such electric suppliers would be difficult or impossible to determine with certainty; (iii) after taking into account the terms of this Agreement and all relevant circumstances as of the date hereof, the damages set forth in Section 2.5.2(a) represent reasonable and genuine estimates of such damages; and (iv) such damages are not intended to and do not constitute a penalty.

Section 2.6 Representations, Warranties and Acknowledgements.

2.6.1 Representations and Warranties of Owner. The Owner hereby represents and warrants to the SEU as follows:

- (a) unless it is an individual, it is duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization, and is duly authorized and qualified to do business therein, in Delaware and in all other jurisdictions in which the nature of the business conducted by it makes such qualification necessary;
- (b) it is not in violation of any Applicable Law in any manner that would reasonably be expected to affect its performance under this Agreement;
- (c) there are no legal, administrative or arbitral proceedings or actions, controversies or investigations, now pending or to its knowledge threatened against it which, if adversely determined, could reasonably be expected to affect its performance under this Agreement;
- (d) none of the execution, delivery or performance of this Agreement conflict with or result in a violation of the terms of its charter or by-laws or any agreement by which it is bound;
- (e) the execution, delivery and performance of this Agreement have been duly authorized by all requisite action;
- (f) this Agreement has been duly and validly executed and delivered by it and, when executed and delivered by the SEU, will constitute its legal, valid and binding obligation enforceable in accordance with its terms, except as the enforceability thereof may be limited by bankruptcy, insolvency, reorganization or moratorium or other similar laws relating to the enforcement of creditors' rights generally and by general equitable principles;
- (g) it has rights in, and good title to the Collateral, and has full power and authority to grant to the SEU the security interest in the Collateral and to execute, deliver and perform its obligations in accordance with the terms of this Agreement without the consent or approval of any other Person other than any consent or approval that has been obtained;
- (h) the security interest granted by the Owner to the SEU pursuant to Section 5.2.1 constitutes a valid, legal and, upon the filing of the financing statements referred to in Section 5.2.2, a first-priority perfected security interest in all the Collateral granted by the Owner as security for the Secured Obligations;

- (i) the Project is an Eligible Energy Resource as defined by REPSA and will obtain all necessary approvals, regulatory or otherwise, to perform the obligations set forth herein;
- (i) ~~(i)~~the information set forth in Part I is true and accurate in all respects;
- (k) ~~(j)~~the Owner has received no supplemental funding from public sources other than the funding, if any, identified in Part I;
- (l) to the extent bidding in Tiers N-1, N-2 or N-3 ~~(k)~~all major components of the Project are or will be new and unused and are being or will be used for the first time in the Project; and
- (m) if a New System, ~~(i)~~its completed System Interconnection Application was accepted by ~~its~~'s acceptance date with the Interconnecting Utility after November 30, 2011 will be after the first date of the preceding compliance year's auction process.

2.6.2 Acknowledgements by Owner. The Owner hereby acknowledges and agrees that:

- (a) the SEU has executed this Agreement and is purchasing Project SRECs for the benefit of certain retail electricity suppliers operating in the State of Delaware;
- (b) in executing and performing this Agreement, the SEU is acting on behalf of such suppliers;
- (c) such suppliers are third party beneficiaries of this Agreement who are entitled to directly enforce the terms hereof; and
- (d) the SEU may appoint a third-party (the "**Contracting Agent**") to perform any or all of the obligations and responsibilities of the SEU pursuant to this Agreement and, in such event, the Owner shall recognize the authority of the Contracting Agent to perform such obligations and responsibilities.

2.6.3 Acknowledgement by SEU. The SEU acknowledges and agrees that it is not entitled to any portion of the energy output, capacity or ancillary services from the Project pursuant to this Agreement.

Section 2.7 Change in Estimated SREC Quantity. An Owner may not modify the Estimated SREC Quantity except as expressly permitted hereunder.

Section 2.8 Default And Remedies.

2.8.1 Events of Default. Each of the following shall constitute an "**Event of Default**" with respect to a Party:

- (a) such Party fails to pay when due any amount owed pursuant to this Agreement (other than an amount disputed in good faith) for a period of 5 days following receipt of notice of such failure;
- (b) any representation or warranty of such Party made pursuant to this Agreement shall have been incorrect when made and shall remain incorrect 30 days after notice thereof;
- (c) with respect to the Owner and, if one is designated, the Owner Representative: (i) the Bid Deposit or, if applicable, the Supplemental Credit Support is not maintained or the issuer thereof repudiates its obligations thereunder; or (ii) the lien required pursuant to Section 5.2 ceases to be a perfected, first priority security interest;
- (d) with respect to the Owner and, if one is designated, the Owner Representative, the nameplate rating of the Project varies from that set forth in Part I by more than: (i) 5% for a Tier N-1 Project or a Tier 2 Project N-2 Project, a Tier E-1 Project, a Tier N-3 Project with a nameplate rating less than 500 kW or a Tier E-2 Project with a nameplate rating less than 500 kW; or (ii) 2.5% for a Tier N-3 Project with a nameplate rating of 500 kW or greater or a Tier E-2 Project with a nameplate rating of 500 kW or greater;
- (e) with respect to the Owner and, if one is designated, the Owner Representative, any Project SRECs (up to the Maximum Annual Quantity and, if applicable, any portion of any Excess Amount that the SEU elects to purchase pursuant to Section 2.1.2(a)) are not transferred to the SEU;
- (f) with respect to the Owner and, if one is designated, the Owner Representative, the Project shall have been designated in Part I as eligible for the Delaware Equipment Bonus or the Delaware Workforce Bonus and the DPSC shall have failed to certify the Project as eligible for any such designated credit within 30 days after the Operation Date;
- (g) with respect to the Owner Representative (but not the Owner), either: (i) any representation or warranty of the Owner Representative made pursuant to Part III shall have been incorrect when made and shall remain incorrect 30 days after notice thereof; or (ii) the Owner Representative fails to perform any obligation pursuant to Part III for a period of 30 days following receipt of notice of such failure;
- (h) such Party fails to perform any other obligation pursuant to this Agreement for a period of 30 days following receipt of notice of such failure; or

- (i) a proceeding is instituted against such Party seeking to adjudicate it as bankrupt or insolvent and such proceeding is not dismissed within 60 days of filing; such Party makes a general assignment for the benefit of its creditors; a receiver is appointed on account of the insolvency of such Party; such Party files a petition seeking to take advantage of any Applicable Law relating to bankruptcy, insolvency, reorganization, winding up or composition or readjustment of debts; or such Party is unable to pay its debts when due or as they mature.

2.8.2 General Remedies.

- (a) Upon the occurrence of an Event of Default by the Owner, the SEU shall be entitled to: (i) exercise any remedies described in this Agreement which, unless specified to be exclusive, shall be deemed non-exclusive; (ii) exercise any remedies available at law or in equity, including specific performance, termination of this Agreement, and/or recovery of damages equal to the incremental cost of replacing the expected SREC output of the Project for the remaining term of this Agreement (based on a reasonable forecast of the market price for SRECs, as determined by an independent expert designated by the SEU); and/or (iii) suspend its performance hereunder.
- (b) Upon the occurrence of an Event of Default by the Owner Representative pursuant to Section 2.8.1(g), the Owner and/or the SEU shall be entitled to: (i) remove such Owner Representative as a Party to this Agreement by delivery of written notice to such Owner Representative and the other Party and, if necessary, replace such Owner Representative; and (iii) exercise any remedies available at law or in equity, including specific performance; *provided, however*, that neither the Owner nor the SEU may terminate this Agreement based on such an Event of Default by the Owner Representative.
- (c) Upon the occurrence of an Event of Default by the SEU, the Owner shall be entitled to: (i) exercise any remedies described in this Agreement which, unless specified to be exclusive, shall be deemed non-exclusive; (ii) exercise any remedies available at law or in equity, including specific performance or termination of this Agreement and recovery of damages equal to the difference, if positive, between the Purchase Price under this Agreement and the market price for SRECs in Delaware for the remaining term of this Agreement (based on a reasonable forecast of the market price for SRECs, as determined by an independent expert designated by the Owner); and/or (iii) suspend its performance hereunder. During any such suspension, the Owner and, if one is designated, the Owner Representative, shall have the right to transfer and sell Project SRECs to one or more third parties in order to mitigate its damages hereunder.

2.8.3 Specific Remedies.

- (a) Upon the occurrence of an Event of Default described in Section 2.8.1(f), the SEU may terminate this Agreement and recover damages equal to the remaining balance of the Bid Deposit. Payment or forfeiture of such amount shall be the exclusive liability of the Owner in such event.
- (b) The Owner and, if one is designated, the Owner Representative, acknowledges and agrees that: (i) in the event not all Project SRECs are transferred to the SEU or the Project fails to qualify for the Delaware Workforce Bonus after the SEU allots a portion of its procurement for SREC credits, the damages to be suffered by the SEU and certain retail electricity suppliers would be difficult or impossible to determine with certainty; (ii) after taking into account the terms of this Agreement and all relevant circumstances as of the date hereof, the damages set forth in Section 2.8.3(a) represent reasonable and genuine estimates of such damages; and (iii) such damages are not intended to and do not constitute a penalty.

2.8.4 Limitations of Liability.

- (a) Neither Party shall be liable to the other Party for consequential, incidental, punitive, exemplary or indirect damages, lost profits or other business interruption damages by statute, in tort or contract, or otherwise.
- (b) Except to the extent provided otherwise in this Agreement, the Owner Representative shall not be liable for a breach or default by the Owner.

Section 2.9 Force Majeure.

2.9.1 Excused Performance. Notwithstanding any other provision of this Agreement, a Party shall be excused from performance hereunder (other than payment of amount due) to the extent it is unable to perform due to a Force Majeure event.

2.9.2 Conditions. A Party claiming Force Majeure shall: (a) have the burden of proving the existence and consequences of a Force Majeure event; and (b) exercise all commercially reasonable efforts to resume performance as soon as reasonably practicable. The suspension of performance due to a Force Majeure shall be of no greater scope and of no longer duration than is required by such Force Majeure.

2.9.3 Notification. A Party affected by a Force Majeure event shall: (a) provide prompt written notice of such Force Majeure event to the other Party (in no event later than 5 days after the occurrence of such Force Majeure event), which notice shall include a description of the Force Majeure event and its effect on performance under this Agreement, and an estimate of the expected duration of such Party's inability to perform due to the Force Majeure; (b) keep the other Party reasonably apprised of efforts to

address, and mitigate the impact of, the Force Majeure event; and (c) provide prompt notice to the other Party as soon as it is able to resume performance.

2.9.4 No Term Extension. In no event will any delay or failure of performance caused by a Force Majeure extend the term of this Agreement.

2.9.5 Extended Force Majeure. In the event that the Owner suffers a Force Majeure event that prevents it from performing hereunder for a period of 1 year or more, the SEU may, by written notice, terminate this Agreement without liability to the Owner.

PART III OWNER REPRESENTATIVE

The provisions of this Part III shall apply only if an Owner Representative is designated in Paragraph B of Part I.

Section 3.1 Agency Appointment. Subject to the Owner's rights to terminate or replace the Owner Representative pursuant to Section 3.3, the Owner hereby appoints the Owner Representative as the Owner's exclusive agent to manage, control, transfer, deposit and register the Project SRECs pursuant to the terms of this Agreement.

Section 3.2 Agency Responsibility. The Owner Representative shall be responsible for managing, controlling, transferring, depositing and registering the Project SRECs on behalf of the Owner within GATS pursuant to the terms of this Agreement. If the Owner has designated the Owner Representative as the Payee, the Owner Representative shall accept all payments hereunder as agent for, and on behalf of, the Owner.

Section 3.3 Termination or Replacement of Owner Representative.

3.3.1 Right to Terminate or Replace. the Owner may, at its discretion, terminate and/or replace the Owner Representative at any time and for any reason (or no reason), *provided, however*, that: (a) the Owner shall immediately notify the SEU of such termination or replacement; ~~(b) if the Owner is required to have an Owner Representative, the Owner shall, no later than 3 Business Days after the termination of the Owner Representative, designate a replacement Owner Representative and provide the SEU with the name, address and contact information for such replacement Owner Representative; and (c) any replacement Owner Representative shall execute a counterpart of this Agreement and agree to be bound by the terms hereof.~~

3.3.2 Effect of Termination or Replacement. Immediately upon receipt by the SEU of written notice in accordance herewith from the Owner that an Owner Representative is being terminated or replaced, such Owner Representative shall be deemed to no longer be a Party to this Agreement. Termination or replacement of the Owner Representative shall not affect any other contractual arrangements between the Owner and the Owner Representative.

3.3.3 Replacement Owner Representative.

- (a) Immediately upon receipt by the SEU of: (i) written notice in accordance herewith from the Owner that it has designated a replacement Owner Representative; and (ii) an executed counterpart of this Agreement, signed by such replacement Owner Representative, such replacement Owner Representative shall be deemed to be a Party to this Agreement.
- ~~(b) If the Owner: (i) terminates the Owner Representative; (ii) is required to have an Owner Representative; and (iii) fails to designate a replacement Owner Representative within 10 Business Days after the termination or replacement of the Owner Representative, the SEU may, in its discretion, designate a replacement Owner Representative.~~

Section 3.4 Representations and Warranties of Owner Representative. The Owner Representative hereby represents and warrants to the SEU as follows:

- (a) it is duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization, and is duly authorized and qualified to do business therein, in Delaware and in all other jurisdictions in which the nature of the business conducted by it makes such qualification necessary;
- (b) it is not in violation of any Applicable Law in any manner that would reasonably be expected to affect its performance under this Agreement;
- (c) there are no legal, administrative or arbitral proceedings or actions, controversies or investigations, now pending or to its knowledge threatened against it which, if adversely determined, could reasonably be expected to affect its performance under this Agreement;
- (d) none of the execution, delivery or performance of this Agreement conflict with or result in a violation of the terms of its charter or by-laws or any agreement by which it is bound;
- (e) the execution, delivery and performance of this Agreement have been duly authorized by all requisite action;
- (f) this Agreement has been duly and validly executed and delivered by it and, when executed and delivered by the Owner and the SEU, will constitute its legal, valid and binding obligation enforceable in accordance with its terms, except as the enforceability thereof may be limited by bankruptcy, insolvency, reorganization or moratorium or other similar laws relating to the enforcement of creditors' rights generally and by general equitable principles;

- (g) the description of the Project set forth in Part I is true and accurate in all respects; and
- (h) it owns, leases, controls or is the direct assignee of all of the SRECs created by the Project and at least one other Eligible Energy Resource.

Section 3.5 Continuing Eligibility. The Owner Representative shall, at all times during the term of this Agreement, own, lease, control or be the direct assignee of all of the SRECs created by the Project and at least one other Eligible Energy Resource.

PART IV MINIMUM ANNUAL QUANTITY

The provisions of this Part IV shall apply only if the Project is designated as a Tier N-3 Project with a nameplate rating of 500 kW or greater or a Tier E-2 Project with a nameplate rating of 500 kW or greater in Paragraph D of Part I.

Section 4.1 Guaranteed Quantity.

4.1.1 Minimum Annual Quantity. During each Contact Year, the Owner shall transfer Project SRECs in an amount equal to no less than 80% of the Annual Contract Quantity (such amount, the "*Minimum Annual Quantity*").

4.1.2 Exclusive Remedy.

- (a) If, during any Contact Year, the Owner fails to transfer the Minimum Annual Quantity of Project SRECs to the SEU, the Owner shall pay the SEU damages equal to the product of: (i) the difference between the Minimum Annual Quantity and the quantity of Project SRECs delivered during such Contact Year; and (ii) the difference, if positive, between (A) the lesser of the prevailing market price of SRECs as reasonably determined by the SEU, and the applicable Alternative Compliance Payment and (B) the applicable price for Project SRECs under this Agreement. Payment of such amount shall be the exclusive liability of the Owner for any such failure with respect to any Contract Year.
- (b) The Owner and, if one is designated, the Owner Representative acknowledge and agree that: (i) the Project SRECs are for the benefit of certain retail electric suppliers operating in the State of Delaware; (ii) if the Project produces less than the Minimum Annual Quantity during any Contact Year, the damages to be suffered by the SEU and such electric suppliers would be difficult or impossible to determine with certainty; (iii) after taking into account the terms of this Agreement and all relevant circumstances as of the date hereof, the damages set forth in Section 4.1.2(a) represent reasonable and genuine estimates of such damages; and (iv) such damages are not intended to and do not constitute a penalty.

Section 4.2 Supplemental Credit Support.

4.2.1 Obligation to Maintain. The Owner shall at all times maintain credit support (the "*Supplemental Credit Support*") in the following amounts:

- (a) during the first ~~10~~7 Contract Years, 5% of the value of the Annual Contract Quantity for the first Contract Year; and
- (b) during the second ~~10~~13 Contract Years, 10% of the value of the Annual Contract Quantity for the eleventh Contract Year.

4.2.2 Form of Supplemental Credit Support. The Supplemental Credit Support shall be in the form of cash, a letter of credit or other collateral acceptable to the SEU.

4.2.3 Obligation to Replenish. If the SEU draws on the Supplemental Credit Support, the Owner must replenish such Supplemental Credit Support to the required level within 3 Business Days.

**PART V
CREDIT SUPPORT**

Section 5.1 Bid Deposit.

5.1.1 Posting of Deposit. Unless the Project is designated as an "Operating Project" in Paragraph D of Part I (in which case no Bid Deposit was provided), the Owner shall cause the Bid Deposit to remain in effect for the benefit of the SEU. No interest shall be owed with respect to a Bid Deposit in the form of cash.

5.1.2 Return or Release of Deposit. Unless the Bid Deposit has been returned or released pursuant to Section 2.2.1(d), the SEU shall return or release any remaining balance of the Bid Deposit promptly after: (a) it receives written verification that the DPSC has certified the Project as an Eligible Energy Resource; (b) if the Project is a Tier N-3 Project with a nameplate rating of 500 kW or greater or a Tier E-2 Project with a nameplate rating of 500 kW or greater, the Owner provides the Supplemental Credit Support; and (c) the Owner has executed any documentation reasonably necessary to perfect the security interest described in Section 5.2.

5.1.3 Application of Deposit. The SEU shall be entitled to call on and/or apply the Bid Deposit as provided pursuant to this Agreement.

Section 5.2 Security Interest.

5.2.1 Grant.

- (a) As security for the performance by the Owner of its obligations under this Agreement (the "*Secured Obligations*"), the Owner hereby grants to the SEU a first-priority security interest, lien and pledge in and to all of the

Owner's right, title and interest in and to all Project SRECs, whether now existing or hereafter arising, the GATS account of the Owner, and all proceeds of any of the foregoing (collectively, the "*Collateral*").

- (b) The SEU's security interest in and to the Collateral and the SEU's rights and the Owner's obligations hereunder, shall be absolute and unconditional irrespective of: (i) any change in the time, manner or place of payment of, or in any other term of, all or any of the Secured Obligations, or any other amendment or waiver of or any consent to any departure from the terms governing the Secured Obligations; (ii) any exchange, release or non-perfection of any Collateral, or any release or amendment or waiver of or consent to or departure from any guaranty, for any and all of the Secured Obligations; or (iii) any other circumstance that might otherwise constitute a defense available to, or a discharge of, the Owner in respect of the Secured Obligations or this Agreement.

5.2.2 Filing and Perfection.

- (a) The SEU is hereby authorized to file one or more financing statements, continuation statements and/or any other documents required for the purpose of perfecting, confirming, continuing, enforcing or protecting the SEU's security interest in the Collateral, with or without the signature of the Owner, naming the Owner as "debtor" and the SEU as "secured party."
- (b) The Owner, at its sole cost and expense, shall execute, acknowledge, deliver and cause to be duly filed any and all consents, instruments, certificates and documents and take any and all actions as the SEU may, at any time and from time to time, reasonably request in order to perfect, preserve and protect the SEU's security interest in and to the Collateral and the rights and remedies created hereby.

5.2.3 Remedy. Upon the occurrence of an Event of Default by the Owner, the SEU may take any lawful action that it deems necessary or appropriate to protect or realize upon its security interest in the Collateral or any part thereof, or exercise any other or additional rights or remedies exercisable by a secured party under the UCC or under any other Applicable Law, including selling the Collateral or any part thereof in one or more parcels at public or private sale, at any exchange or broker's board or elsewhere, at such price or prices and on such other terms as the SEU may deem commercially reasonable in accordance with the UCC and as permitted by Applicable Law.

PART VI DEFINITIONS; RULES OF CONSTRUCTION

Section 6.1 Definitions. The following capitalized terms have the following meanings when used in this Agreement:

"Affiliate" means, with respect to any Person, another Person that controls, is under the control of, or is under common control with, such Person. The term "control" (including the terms "controls", "under the control of" and "under common control with") means the possession, directly or indirectly, of the power to direct or cause the direction of the management of the policies of a person or entity, whether through ownership interest, by contract or otherwise.

"Agreement" means this Solar Renewable Energy Credit Transfer Agreement between the Owner, the SEU and, if one is designated, the Owner Representative.

"Alternative Compliance Payment" has the meaning set forth in the REPSA.

"Annual Contract Quantity" means: (a) for the first Contract Year, the Estimated SREC Quantity; and (b) for each subsequent Contract Year, 99.5% of the Annual Contract Quantity in effect for the immediately preceding Contract Year.

"Applicable Law" means any law, statute, treaty, code, ordinance, regulation, certificate, order, license, permit or other binding requirement of any Governmental Authority now in effect or hereafter enacted, amendment to any of the foregoing, interpretations of any of the foregoing by a Governmental Authority having jurisdiction and any judicial, administrative, arbitral or regulatory decree, judgment, injunction, writ, order, award or like action applicable to any Party.

"Bid Date" shall mean the date specified as such in Paragraph E of Part I.

"Bid Deposit" means a deposit in the amount of \$100 per kW of the nameplate rating (DC at STC as designated by the solar module manufacturer) of the Project, in the form of a bid bond, letter of credit or cash.

"Business Day" means any calendar day that is not a Saturday, a Sunday or a state or federal holiday on which banks in Delaware are permitted or authorized to close.

"Code" means the U.S. Internal Revenue Code of 1986, including applicable rules and regulations promulgated thereunder, as amended from time to time.

"Collateral" has the meaning set forth in Section 5.2.1(a).

"Commencement Date" means the date as of which the SEU is obligated to purchase SRECs hereunder, as specified in Section 2.1.4(a) or 2.1.4(b).

"Contract Year" means each 12-month period commencing on the Commencement Date and each anniversary thereof.

"Contracting Agent" has the meaning set forth in Section 2.6.2.

"DC" means direct current electric energy.

"Delaware Equipment Bonus" has the meaning set forth in Paragraph D of Part I.

“Delaware Workforce Bonus” has the meaning set forth in Paragraph D of Part I.

“DPSC” means the Delaware Public Service Commission or any successor agency.

“Eligible Energy Resource” has the same meaning set forth in REPSA.

“Environmental Attribute” means any attribute of an environmental or similar nature (including all Generation Attributes) that is created or otherwise arises from the Project’s generation of electricity from solar energy in contrast with the generation of electricity using nuclear or fossil fuels or other traditional resources, excluding: (a) any such attribute not legally capable of being transferred to the SEU; and (b) Tax Credits. Forms of Environmental Attributes include any and all environmental air quality credits, green credits, carbon credits, carbon tax credits, emissions reduction credits, greenhouse gas credits, certificates, tags, offsets, allowances, or similar products, rights, claims or benefits, howsoever entitled. Environmental Attributes include those currently existing (such as SRECs) or arising during the term of this Agreement under local, state, regional, federal or international legislation or regulation relevant to the avoidance of any emission or to the promotion of renewable energy under any governmental, regulatory or voluntary programs, including the United Nations Framework Convention on Climate Change and related Kyoto Protocol or other programs, laws, or regulations involving or administered by the Clean Air Markets Division or other division or branch of the U.S. Environmental Protection Agency or any successor administrator or other federal agency or department, or any local, state, regional, or federal entity given jurisdiction over a program, or any voluntary program, involving transferability of, or credit or reporting rights or other rights or benefits for, attributes of an environmental or similar nature.

“Estimated SREC Quantity” means the quantity of SRECs designated in Paragraph D of Part I, as such quantity may be reduced pursuant to the terms of this Agreement.

“Event of Default” has the meaning set forth in Section 2.8.1.

“Excess Amount” means, with respect to the SRECs created by the Project during any Contract Year, any such SRECs in excess of the Maximum Annual Quantity.

“Execution Date” means the date this Agreement is signed by the SEU, as designated on the signature page of the counterpart executed by the SEU.

“Existing System” means a system with final interconnection approval before the first date of the preceding auction process (i.e. April 2, 2012 for compliance year 2012).

“Force Majeure” means an event or circumstance that prevents a Party from performing its obligations in accordance with the terms of this Agreement, which event or circumstance is not within the reasonable control, or the result of negligence, of such Party, including acts of God; unusually severe actions of the elements such as floods, inundation, landslides, earthquake, lightning, hurricanes, or tornadoes; unusually severe weather; terrorism; war (whether or not declared); sabotage, acts or threats of terrorism, riots or public disorders; national or regional strikes or labor disputes; delay in delivery of equipment comprising the Project so long as such

equipment was ordered within 90 days of the Execution Date; and actions or failures to act of any Governmental Authority (including the failure to issue permits); *provided, however*, that Force Majeure shall not include: (a) any strike or labor dispute by any employees or the Owner or any other employees of contractors employed at the Project and aimed at the Owner or such contractor(s); (ii) changes in, or that otherwise affect, the price of SRECs; or (iii) equipment failure, unless caused by a circumstance that would otherwise constitute a Force Majeure.

“**GATS**” means the generation attribute tracking system used by PJM Interconnection, LLC to facilitate the transfer of SRECs.

“**Generation Attribute**” means any characteristic of the solar energy output of the Project other than energy, capacity or Tax Credits, including the Project’s generation source, geographic location, emission credits, carbon credits, vintage and eligibility for a renewable energy portfolio standard or comparable standard or program, including “generation attributes” as defined in REPSA.

“**Governmental Authority**” means any federal, state, local or municipal government, or quasi-governmental, regulatory or administrative agency, commission, court, tribunal or other body or authority exercising or entitled to exercise any administrative, executive, judicial, legislative, policy, regulatory, taxing or other binding jurisdiction, authority or power, including PJM, GATS and NERC.

“**Guaranteed On-Line Date**” has the meaning set forth in Section 2.5.1.

“**Interconnecting Utility**” means the Person that owns the electric transmission or distribution system with which the Project is directly interconnected.

“**kW**” means 1 kilowatt of electric power.

“**Maximum Annual Quantity**” means, for each Contract Year, 110% of the Annual Contract Quantity.

“**Minimum Annual Quantity**” has the meaning set forth in Section 4.1.1.

“**MWh**” means 1 megawatt hour of electric energy.

“**New System**” means a system with final interconnection approval after the first date of the preceding auction process (i.e. April 2, 2012 for compliance year 2012).

“**Operation Date**” means the date on which the Project commences generating electricity.

“**Owner**” means the Person identified as such in Paragraph A of Part I.

“**Owner Representative**” means the Person, if any identified as such in Paragraph B of Part I.

“**Party**” means each of the Owner, the SEU and, if one is designated, the Owner Representative.

“**Payee**” means the Owner or the Owner Representative, as designated in Paragraph C of Part I.

“**Person**” means any natural person, corporation, limited liability company, general partnership, limited partnership, proprietorship, other business organization, trust, union, association or Governmental Authority.

“**PJM**” means PJM Interconnection, LLC or any successor organization thereto.

“**Project**” has the meaning set forth in the introductory paragraph of this Agreement, as such Project is described further in Paragraph D of Part I.

“**Project SRECs**” has the meaning set forth in Section 2.1.1.

“**Purchase Price**” means, with respect to any Contract Year, the amount per Project SREC to be paid by the SEU in accordance with Section 2.4.1.

“**REPSA**” means the Delaware Renewable Energy Portfolio Standards Act (26 Del. C. §§ 351 *et seq.*), as amended, and the implementing rules and regulations thereunder.

“**Required Meter**” means: (a) for any Tier 1 Project that receives the base price or alternate price set forth in the table included in Section 2.4.1(a), at Owner’s option, a standard, utility-grade meter or a revenue-grade meter, in either case capable of on-line monitoring; and (b) for any other Project, a revenue-grade meter capable of on-line monitoring.

“**Secured Obligations**” has the meaning set forth in Section 5.2.1(a).

“**SEU**” has the meaning set forth in the introductory paragraph of this Agreement.

“**SREC**” means a tradable instrument which represents or is associated with 1 MWh of electric energy derived from an Eligible Energy Resource that generates electric energy using solar photovoltaic technology and which qualifies as a “Renewable Energy Credit” under REPSA, together with any Environmental Attributes associated with such energy or the generation thereof.

“**STC**” means standards test conditions, which are: (a) internal cell temperature of 25° C; and (b) irradiance of 1,000 watts per square meter with an air mass 1.5 spectrum.

“**Supplemental Credit Support**” has the meaning set forth in Section 4.2.1.

“**Tax Credits**” means: (a) investment tax credits under Section 48 of the Code; (b) cash grants in lieu of investment tax credits as described in Section 1603 of the American Recovery and Reinvestment Act of 2009 (P.L. 111-5); and (c) any federal, state, or local tax credits, cash grants in lieu of tax credits, tax exemptions, depreciation, tax attributes or benefits, or similar

programs determined by reference to the construction, operation or ownership of, investment in, or production of electricity from, renewable energy production facilities, in each case whether in existence as of the Bid Date or arising thereafter; *provided, however*, that Tax Credits shall not include any carbon tax credits.

“Tier N-1 Project” has the meaning set forth in Paragraph D of Part I.

“Tier N-2 Project” has the meaning set forth in Paragraph D of Part I.

“Tier 2-A-N-3 Project” has the meaning set forth in Paragraph D of Part I.

“Tier 2-B-E-1 Project” has the meaning set forth in Paragraph D of Part I.

“Tier 3-E-2 Project” has the meaning set forth in Paragraph D of Part I.

“UCC” means the Uniform Commercial Code as in effect in the State of Delaware.

Section 6.2 Rules of Construction.— The following rules of construction shall apply when interpreting the terms of this Agreement:

- (a) references to “Parts,” “Sections,” or “Exhibits” shall be to Parts, Sections or Exhibits of this Agreement unless expressly provided otherwise;
- (b) each Exhibit to this Agreement shall be deemed to be incorporated herein by reference as if such Exhibit were set forth in its entirety herein;
- (c) the terms “herein,” “hereby,” “hereunder,” “hereof” and terms of similar import in this Agreement refer to the Agreement as a whole and not to any particular subdivision unless expressly so limited and the term “this Section” refers only to the Section hereof in which such words occur;
- (d) use of the words “include” or “including” or similar words shall be interpreted as “including but not limited to” or “including, without limitation”;
- (e) any reference to any Applicable Law shall be deemed to refer to that law as it may be amended from time to time;
- (f) the headings appearing in this Agreement are for convenience only, do not constitute any part of this Agreement and shall be disregarded in construing the language contained herein; and
- (g) no term of this Agreement shall be construed in favor of, or against, a Party as a consequence of one Party having had a greater role in the preparation or drafting of this Agreement, but shall be construed as if the language were mutually drafted by both Parties with full assistance of counsel.

**PART VII
GENERAL PROVISIONS**

Section 7.1 Notices.— Any notices, requests, consents or other communications required or authorized to be given by one Party to another Party pursuant to this Agreement shall be in writing. Such communications directed to the Owner or, if one is designated, the Owner Representative, shall be addressed as set forth in Part I. Communications directed to the SEU shall be addressed as set forth below. Any Party may update its address for notice by providing written notice in accordance herewith. Written notices, requests, consents and other communications shall be deemed to have been received on the Business Day following the day on which it was delivered. Notwithstanding the foregoing, in the event the SEU establishes an on-line web site for certain routine communications pursuant to this Agreement, notice of such routine matters shall be permitted in accordance with procedures established by the SEU.

SEU:

[Contract Administrator]

Section 7.2 Governing Law.— This Agreement and the rights and obligations of the Parties shall be governed by and construed, enforced and performed in accordance with the laws of the State of Delaware, without regard to principles of conflicts of law.

Section 7.3 Dispute Resolution. All disputes arising between or among the Parties pursuant to this Agreement shall be submitted to neutral, non-binding mediation. If the Parties to such dispute are unable to agree upon a mutually acceptable mediator, each such Party shall designate a mediator and those mediators shall agree on a single, neutral mediator to conduct the mediation. All costs of the neutral mediator shall be shared equally by the Parties. If the Parties are unable to resolve a dispute within 30 days of the dispute being submitted to mediation, any Party to the dispute shall be entitled to initiate litigation in a court of competent jurisdiction.

Section 7.4 Jurisdiction and Venue.— THE PARTIES AGREE THAT JURISDICTION AND VENUE IN ANY ACTION BROUGHT BY ANY PARTY PURSUANT TO THIS AGREEMENT SHALL PROPERLY (AND EXCLUSIVELY) LIE IN ANY FEDERAL OR STATE COURT LOCATED IN NEW CASTLE COUNTY, DELAWARE. BY EXECUTION AND DELIVERY OF THIS AGREEMENT, EACH PARTY IRREVOCABLY SUBMITS TO THE JURISDICTION OF ANY SUCH COURT FOR ITSELF AND IN RESPECT OF ITS PROPERTY WITH RESPECT TO SUCH ACTION. EACH PARTY IRREVOCABLY AGREES THAT VENUE WOULD BE PROPER IN ANY SUCH COURT, AND HEREBY WAIVES ANY OBJECTION THAT ANY SUCH COURT IS AN IMPROPER OR INCONVENIENT FORUM FOR THE RESOLUTION OF SUCH ACTION.

Section 7.5 Service of Process.— Each Party: (a) irrevocably waives personal service of process in any litigation relating to this Agreement; and (b) irrevocably consents to service of process in any action or proceeding arising out of, or relating to, this Agreement by the mailing of copies thereof by registered mail, postage prepaid, such service to become effective 10 days

after such mailing; *provided, however*, that nothing in this Section 7.5 shall affect the right of a Party to serve process in any other manner permitted by Applicable Law.

Section 7.6 Waiver of Right to Jury Trial.— TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, AND AS SEPARATELY BARGAINED-FOR CONSIDERATION, EACH PARTY HEREBY WAIVES ANY RIGHT TO TRIAL BY JURY IN CONNECTION WITH ANY CLAIM ARISING OUT OF, OR RELATING TO, THIS AGREEMENT.

Section 7.7 Records.— Each Party shall keep and maintain complete and accurate records and all other data reasonably necessary for the proper administration of this Agreement. Any Party shall provide such records and data to another Party within 15 days of a written request for such information. All such records and data shall be retained by each Party for at least 3 years following the year in which such records were created.

Section 7.8 Assignment.

7.8.1 Restrictions. Except as permitted pursuant to Section 7.8.2, neither the Owner nor the Owner Representative may assign this Agreement or any portion thereof or delegate any of its duties hereunder except where otherwise provided in this Agreement, without the prior written consent of the SEU. Without limiting the foregoing, the Owner may not sell, assign, convey, dispose of or otherwise transfer the Project without assigning this Agreement to the purchaser, assignee or transferee.

7.8.2 Permitted Assignments. The Owner may assign this Agreement without the consent of the SEU: (a) in connection with any financing of the Project, which financing shall be at the Owner's sole expense; or (b) to a purchaser or transferee of the Project provided all the requirements of the Section 7.8.2 are met. With respect to any permitted assignment of this Agreement: (i) the assigning Party shall provide at least thirty (30) days prior notice of any such assignment, which notice shall include the name of, and contact information for, the assignee; (ii) the assignee shall expressly assume the assignor's obligations hereunder pursuant to an agreement in form and substance reasonably acceptable to the non-assigning Party; and (iii) no such assignment shall relieve the assignor of its obligations hereunder.

7.8.3 Consent to Assignment. Upon or prior to a permitted assignment in connection with a financing of the Project, the SEU agrees to execute a written consent in a form reasonably acceptable to the SEU. If such written consent is not requested, the Owner shall notify the SEU of any such assignment to its secured lender(s) no later than thirty (30) days after such assignment.

7.8.4 Binding Effect. This Agreement, as it may be amended from time to time, shall be binding upon, and inure to the benefit of, the Parties and their respective successors and permitted assigns.

Section 7.9 Delay and Waiver.— Except as otherwise provided in this Agreement, no delay or omission to exercise any right, power or remedy accruing to a Party upon any breach or default

by the other Party shall impair any such right, power or remedy, nor shall it be construed to be a waiver of any such similar breach or default thereafter occurring; nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring.

Section 7.10 Relationship of the Parties.— This Agreement shall not be interpreted to create an association, joint venture, or partnership between or among any of the Parties or to impose any partnership obligation or liability upon any Party.

Section 7.11 Survival of Obligations.— Applicable provisions of this Agreement shall continue in effect after expiration or termination of this Agreement, including early termination, to the extent necessary to enforce or complete the duties, obligations and responsibilities of the Parties arising prior to such expiration or termination, including to provide for final billings and adjustments related to the period prior to termination and payment of any money owed pursuant to this Agreement.

Section 7.12 Severability.— In the event any of the terms, covenants, or conditions of this Agreement, its Exhibits or the application of any such terms, covenants or conditions, shall be held invalid, illegal or unenforceable by any court or administrative body having jurisdiction, all other terms, covenants and conditions of the Agreement shall remain in full force and effect.

Section 7.13 Entire Agreement.— This Agreement constitutes the entire agreement between and among the Parties and supersedes all previous and collateral agreements or understandings with respect to the subject matter hereof.

Section 7.14 Amendments.— Amendments to the terms of this Agreement (including any Exhibit hereto) shall only be effective if made in writing and signed by the Parties.

Section 7.15 Headings.— Captions and headings used in this Agreement are for ease of reference only and do not constitute a part of this Agreement.

Section 7.16 Counterparts.— This Agreement and any amendment hereto may be executed in two or more counterparts, all of which taken together shall constitute a single agreement.

Section 7.17 Further Assurances. Each of the parties hereto agree to cooperate with the other and to provide such information, execute and deliver any instruments and documents and to take such other actions as may be necessary or reasonably requested by the other party, which are not inconsistent with the provisions of this Agreement and which do not involve the assumptions of obligations other than those provided for in this Agreement, in order to give full effect to this Agreement and to carry out the intent of this Agreement.

[signature page follows]

IN WITNESS WHEREOF, the Parties have executed this Agreement the day and year first above referenced.

Owner:

[Name of Owner]

By: _____

Owner Representative:

[Name of Owner Representative]

By: _____

SEU One, LLC

By: _____

Date: _____

Exhibit A
Estimated First Year Energy Output