

STATE OF NEW JERSEY
BEFORE THE BOARD OF PUBLIC UTILITIES

In the Matter of the Petition of Public)
Service Electric and Gas Company for)
Approval of A Solar Loan III Program)
and Associated Cost Recovery) BPU Docket No. EO12080726
Mechanism And For Changes in the)
Tariff for Electric Service, B.P.U.N.J. No.)
15 Electric Pursuant To N.J.S.A. 48:2-21)
And N.J.S.A. 48:2-21.1)

SURREBUTTAL TESTIMONY OF DAVID E. DISMUKES, PH.D.
ON BEHALF OF THE
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TABLE OF CONTENTS

I. INTRODUCTION..... 1

II. POLICY 2

III. SREC OVERSUPPLY PROJECTIONS 2

IV. RATE IMPACT ANALYSIS..... 9

V. CONCLUSION 10

SCHEDULES DED-SR-1 THROUGH DED-SR-3

1 • Section IV: Rate Impact Analysis

2 **II. POLICY**

3 **Q. DO YOU AGREE WITH THE COMPANY'S ASSERTION THAT ITS**
4 **PROPOSED SOLAR LOAN III PROGRAM ("SLIII") IS CONSISTENT WITH STATE**
5 **ENERGY POLICY AND PARTICULARLY THE BOARD'S MAY 2012 ORDER?**

6 A. No. The Company states that at an agenda meeting on April 27, 2011, the Board directed
7 Staff to conduct a review of existing utility solar programs to determine if such programs
8 "should continue, be allowed to expire, be modified or expanded."¹ The Company further states
9 that the Office of Clean Energy's ("OCE") finding with regards to this directive was to
10 ultimately expand utility solar programs by 180 MW split among participating electric
11 distribution companies ("EDCs").² While the resulting May 2012 Board Order did formalize
12 OCE's recommendation, it did not state that these programs should be continued at any cost.

13 **III. SREC OVERSUPPLY PROJECTIONS**

14 **Q. DOES THE COMPANY ATTEMPT TO REFUTE THE CLAIM THAT THE**
15 **PROPOSED SLIII IS UNNECESSARY IN LIGHT OF THE CURRENT STATE OF THE**
16 **MARKET FOR SOLAR RENEWABLE ENERGY CERTIFICATES?**

17 A. Yes. The Company essentially makes three arguments attempting to refute the point
18 made in my Direct Testimony that the SLIII is unnecessary in light of the over development that
19 exists within the State's solar energy market. First, the Company claims that attempting to
20 predict the New Jersey future solar build rates or future SREC prices is difficult in light of
21 uncertainties.³ Second, the Company claims that a review of the historic solar build rate in New

¹Direct Testimony of Terrence J. Moran, 3:15-18.

²Direct Testimony of Terrence J. Moran, 4:3-9.

³Direct Testimony of Terrence J. Moran, 9:3-4.

1 Jersey suggests that the market may not be overbuilt for as long as some parties have suggested.⁴
2 Lastly, the Company insists that Rate Counsel is “missing the point,” in its definition of
3 necessity.⁵ PSE&G claims that its proposal is intended to ensure the availability of capital for the
4 continued development of net metered solar projects, and not to fill an unmet demand for
5 SRECs.⁶

6 **Q. DO YOU DISAGREE WITH THE COMPANY’S POSITION THAT SOLAR**
7 **INSTALLATION AND SREC SUPPLY FORECASTS OFTEN INCORPORATE A**
8 **DEGREE OF UNCERTAINTY?**

9 A. No. Forecasts by definition incorporate varying degrees of uncertainty. However, the
10 Company is likely overstating the extent of uncertainty surrounding the solar market forecasts.
11 For instance, the Company references a Bloomberg New Energy Finance (“BNEF”) December 3,
12 2012 publication showing solar supply status starting Energy Year (“EY”) 2015 as #BEGIN
13 **CONFIDENTIAL# [REDACTED] #END CONFIDENTIAL#**. What the Company fails to put into
14 context is the #BEGIN CONFIDENTIAL# [REDACTED]

15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]

⁴Direct Testimony of Terrence J. Moran, 9:3-5.
⁵Direct Testimony of Terrence J. Moran, 8:1-2.
⁶Direct Testimony of Terrence J. Moran, 7:21 to 8:1.

1 [REDACTED]

2 [REDACTED] #END CONFIDENTIAL#

3 **Q. PLEASE DESCRIBE THE COMPANY’S POSITION REGARDING THE OCE**
4 **SOLAR DEVELOPMENT FORECASTS.**

5 A. The Company suggests that the OCE’s solar development forecasts should not be given
6 much weight due to the simplicity of the methods used to develop it. In this the Company argues
7 that the OCE’s forecast does not take into account industry trends as it calculates future solar
8 build rates as an assumed proportion of the incremental RPS.⁷

9 **Q. DO YOU AGREE THAT THE OCE’S SOLAR DEVELOPMENT FORECAST**
10 **SHOULD BE DISMISSED OUT OF HAND AS BEING OVERLY SIMPLISTIC?**

11 A. No. It is a well held concept in forecasting that predictive models should maintain a
12 certain degree of simplicity, so the Company’s arguments that OCE’s forecasts are too simple do
13 not hold a considerable amount of merit. Further, the Company, despite its criticisms, has failed
14 to provide any forecasting variance analysis of past OCE projections to support its claims that
15 OCE’s approach is significantly flawed. OCE’s projections represent another set of insights into
16 solar market development, and are important since they come from a neutral third party. The
17 fact that OCE’s projections are consistent with other sources, including commercial sources
18 purchased by the Company, suggests that the “simplistic” approach may not be without merit.

19 **Q. HAS THE COMPANY RAISED ANY ISSUES IN THE PAST REGARDING**
20 **OCE’S SOLAR DEVELOPMENT FORECAST?**

21 A. No and, in fact, the Company was asked in discovery to provide all analyses, comments
22 or other materials it provided to the OCE regarding OCE’s solar installation projections. The

⁷See, Direct Testimony of Terrence J. Moran, 10:2-10.

1 Company answered that it had not provided any comments, input or recommendations to the
2 OCE. The Company also indicated that it had not performed a variance analysis (measuring the
3 difference between actuals-to-projected installations) on the OCE's forecast.⁸

4 **Q. HAS THE COMPANY PRESENTED AN EMPIRICAL ANALYSIS OF THE**
5 **SOLAR ENERGY MARKET IN ANY OF ITS TESTIMONY IN THIS PROCEEDING?**

6 A. No, it has not. The Company has taken every opportunity to criticize and dismiss the
7 solar market analyses of all parties who have presented such analyses within this proceeding,
8 without submitting an alternative analysis of its own. In fact, when asked in discovery to provide
9 all New Jersey solar market analyses within its possession, the Company provided a series of
10 reports, that included a number of solar market projections, from BNEF.⁹ The BNEF forecast
11 presented in my Direct Testimony was the most recent of these reports from BNEF and was
12 provided by the Company as the only solar market forecast in its possession.

13 **Q. HAS THE COMPANY SUBSEQUENT TO THE FILING OF TESTIMONY**
14 **ATTEMPTED TO PRESENT AN EMPIRICAL ANALYSIS OF THE SOLAR ENERGY**
15 **MARKET?**

16 A. Yes. The Company prepared a forecast that was provided in response to discovery
17 questions associated with its rebuttal testimony.¹⁰ This new Company solar development
18 forecast clearly comes late in this proceeding. Regardless, even this new PSE&G forecast is
19 only able to justify the Company's position of a pending undersupply in the SREC market by
20 assuming a 487 MWh, or 36.4 percent, shortfall in New Jersey solar generation supply in
21 EY2014. This is inconsistent with the position of the BNEF, and the OCE worse-case

⁸ Company response to RCR-P-36.

⁹ Company response to Data Request RCR-P-19.

¹⁰ Company response to Data Request RCR-P-36.

1 projections, which project New Jersey solar generation supply to equate to #BEGIN
2 CONFIDENTIAL# [REDACTED] #END CONFIDENTIAL# and 126.6 percent of the State's
3 RPS, respectively. In fact, the Company's estimated solar market shortfall does not appear to be
4 supported by its prior testimony which clearly states that "[w]hat is known with relative
5 certainty is that the New Jersey SREC market will be 'long' through EY2014."¹¹

6 **Q. DO YOU AGREE WITH THE COMPANY'S ASSERTION THAT AN INFLUX**
7 **OF LARGE GRID-CONNECTED PROJECTS IS CHANGING THE MAKEUP OF THE**
8 **PROJECT PIPELINE?**¹²

9 A. I agree that an increase in large grid-connected projects accounts for a large portion of the
10 project pipeline, however, I disagree with the Company's assertion that this has imparted a
11 greater degree of uncertainty to the market. Namely, the Company's assertion that large grid
12 connected projects are generally less likely to come to fruition, or that an increase in the
13 cancellation rates of these projects has had a substantial effect on the overall market, is
14 unsupported.

15 **Q. HAVE YOU CONDUCTED ANY ANALYSIS OF THE CANCELLATION RATES**
16 **OF NEW JERSEY SOLAR PROJECTS?**

17 A. Yes, and the results of that analysis are presented in Schedule DED-SR-1. This analysis
18 utilizes monthly reports provided by the OCE to compare the total capacity of projects listed in
19 the project pipeline with the capacity of those that end up being cancelled or scrubbed.¹³ This
20 schedule depicts, on a capacity (kW) basis, the percentage of grid-connected and net metered
21 capacity residing within the pipeline in any given month versus the amount of capacity which

¹¹Direct Testimony of Terrence J. Moran, 9:7-8.

¹²Direct Testimony of Terrence J. Moran, 10:12-14; 11:2-4.

¹³ For the purpose of this analysis, all projects within the pipeline as of December 31, 2012 were removed from calculations as it is unknown whether these projects will be built.

1 ends up actually being constructed. The results of my analysis show that historically, grid-
2 connected projects within the pipeline were far more likely to come to fruition than net metered
3 projects. Around the beginning of 2012 this began to change, as market conditions and new
4 regulations have caused circumstances where a substantial portion of capacity proposed after this
5 time has ended up being cancelled. However, the completion percentage of net metered capacity
6 has remained strong, averaging 62.5 percent since November 2010 and has only fluctuated
7 between a low of 54.5 percent and a high of 70.9 percent. The decline in the completion rate of
8 grid-connected projects has also had little effect on the overall completion rate of solar energy
9 capacity within the pipeline, which remained at a healthy 58.2 percent in October 2012, due to
10 the small percentage of overall New Jersey solar market grid-connected projects. Even during
11 the substantial run up in grid-connected capacity seen in the summer of 2012, in my analysis
12 grid-connected solar energy only accounted for 30.6 percent of the total solar energy pipeline.
13 On average since November 2010, grid-connected solar has accounted for less than 20 percent of
14 solar capacity moving within the pipeline.

15 **Q. HAS THE OCE CHANGED ITS PROJECTION OF NEW JERSEY SOLAR**
16 **BUILD RATES AND GENERATION?**

17 A. Yes. At the most recent BPU-OCE Renewable Energy Committee meeting held
18 February 14, 2013 the OCE presented an update of its solar generation forecast to include 2012
19 solar projects installed subsequent to October 31, 2012. I have updated the historic and
20 forecasted solar installation trends based on this updated information in Schedule DED-SR-2.
21 The second page of this analysis shows that the OCE forecasts monthly build rates to continue to
22 be significant, at between 14 MW per month, to 48 MW per month over the next five energy
23 years. The OCE's revised numbers are arguably more optimistic than previous forecasts

1 regarding build rates as the OCE “low” forecast now projects an increase in solar installation
2 rates in EY2015 and EY2016. This means that, contrary to the Company’s position, the OCE
3 sees greater possibility of the current oversupply in the Solar Markets continuing into the future
4 than it did just two months ago.

5 In addition, Schedule DED-SR-3 shows that OCE also estimates SREC availability to be
6 above, if not significantly above, the new solar RPS requirement defined in the Solar Energy
7 Act¹⁴ until EY2016. The one exception to this above-requirement is still the trend within the
8 “low” forecast scenario for EY2016 where SREC availability is anticipated to be below the RPS
9 requirement in that year. OCE’s median SREC availability forecast, however, ranges from a
10 high of 230 percent of the annual SREC requirement to a low of 116 percent of the SREC
11 requirement in EY2016.

12 **Q. DO YOU BELIEVE THE COMPANY’S CITATION TO TWO RECENT**
13 **CANCELLATIONS OF LARGE GRID SUPPLY PROJECTS¹⁵ INDICATES**
14 **“EVIDENCE” OF A SIGNIFICANT REDUCTION IN BUILD RATES BEYOND THAT**
15 **INCORPORATED WITHIN FORECASTS BY MARKET ANALYSTS?**

16 A. No. I have reviewed the OCE published inventory of projects currently within the
17 pipeline and at the time of the December forecast, which was provided as a Schedule in my
18 Direct Testimony. The OCE had already removed both of these two grid supply projects from its
19 pipeline inventory. This understanding is apparently consistent with the Company’s
20 understanding.¹⁶ Contrary to the Company’s claims, this would imply that the OCE had already

¹⁴ N.J.S.A. 48:3-87 (d)

¹⁵ Direct Testimony of Terrence J. Moran, 12:12 to 13:2.

¹⁶ Company response to Data Request RCR-P-38.

1 taken into account the effect the withdrawal of these two projects would have on projected solar
2 development.

3 **IV. Rate Impact Analysis**

4 **Q. DO YOU AGREE WITH THE COMPANY'S ASSERTIONS THAT YOUR RATE**
5 **IMPACT ANALYSIS IS INCORRECT?**

6 A. No. In my direct testimony, I noted that the revenue credits utilized by the Company in
7 developing its rate impact estimates were overstated. These revenue credits were based upon
8 unrealistically high SREC prices as well as PJM energy and capacity prices. The Company
9 suggests that my criticism of these revenue credits is incorrect since "these figures are not
10 guarantees of future market conditions," since "the actual rate may go up or down."¹⁷ The point
11 of my analysis, however, was not to suggest that prices were, or should be, known with any
12 certainty but rather to point out that the Company's estimated rate impacts were understated
13 since they were based upon SREC, energy and capacity prices that were beyond most reasonable
14 expectations of future market conditions.

15 **Q. WHAT ARE THE CONSEQUENCES OF OVERSTATING THE MAGNITUDE**
16 **OF THESE REVENUE CREDITS?**

17 A. For ratepayers, two consequences are noteworthy. First, high SREC prices can make the
18 rate impacts associated with the Company's proposal appear reasonable. And second, since
19 there are no regulatory or financial consequences to the Company at some later date if these
20 revenue credits were incorrectly estimated, ratepayers would, in fact, bear the full responsibility
21 for the Company's revenue credit forecasting error.

¹⁷Direct Testimony of Terrence J. Moran, 14:9-10.

1 V. Conclusion

2 Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY FILED ON
3 MARCH 1, 2013?

4 A. Yes it does, however, I hold open the right to modify or supplement my surrebuttal
5 testimony should additional information or evidence be provided at some later date.

SCHEDULES DED-SR-1 THROUGH DED-SR-3

Capacity in Solar Project Pipeline

As of Month Ending	Capacity in Solar Project Pipeline			Percentage of Pipeline		
	Net Metered	Grid-Connected	Total	Net Metered	Grid-Connected	(%)
Nov-10	174,516	40,903	215,419	81.01%	18.99%	
Dec-10	104,043	41,851	145,894	71.31%	28.69%	
Jan-11	113,533	38,675	152,208	74.59%	25.41%	
Mar-11	194,304	28,099	222,402	87.37%	12.63%	
Apr-11	208,952	28,099	237,050	88.15%	11.85%	
May-11	252,743	28,099	280,841	89.99%	10.01%	
Jun-11	248,771	27,184	275,955	90.15%	9.85%	
Jul-11	238,838	77,724	316,562	75.45%	24.55%	
Aug-11	224,548	136,871	361,418	62.13%	37.87%	
Oct-11	240,390	148,694	389,084	61.78%	38.22%	
Nov-11	235,105	143,553	378,658	62.09%	37.91%	
Dec-11	231,523	134,499	366,022	63.25%	36.75%	
Jan-12	213,355	91,657	305,012	69.95%	30.05%	
Feb-12	197,044	88,317	285,360	69.05%	30.95%	
Mar-12	172,904	85,106	258,010	67.01%	32.99%	
Apr-12	145,195	81,392	226,586	64.08%	35.92%	
Jun-12	105,268	64,653	169,921	61.95%	38.05%	
Jul-12	89,284	63,272	152,556	58.53%	41.47%	
Aug-12	70,334	45,854	116,188	60.53%	39.47%	
Oct-12	35,155	8,076	43,231	81.32%	18.68%	
			Average:	71.99%	28.01%	

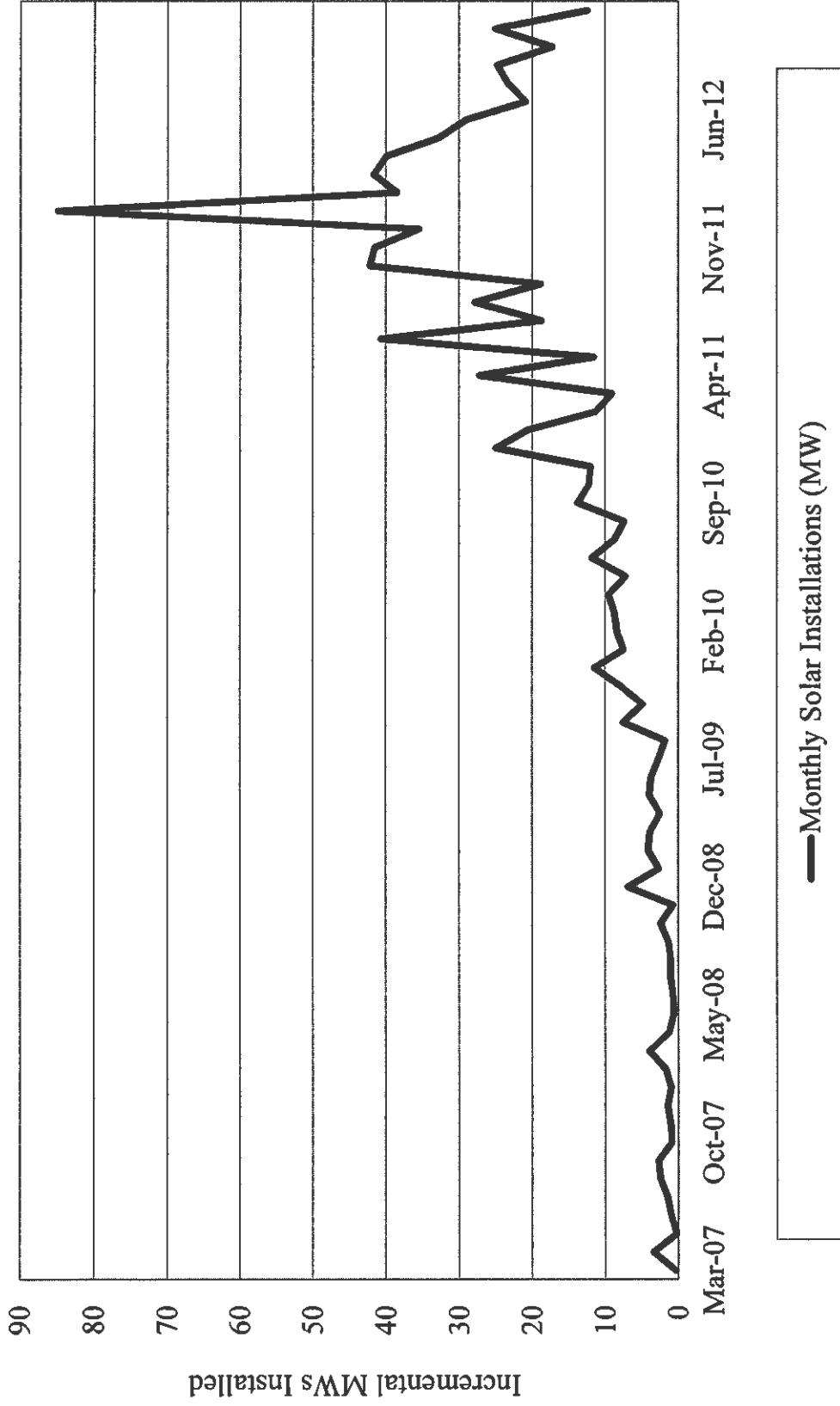
Source: Office of Clean Energy, Solar Installation Summary (as of Dec. 31, 2012) and Office of Clean Energy, Monthly Solar Projects Pipeline (month ending Nov. 2010 to month ending Oct. 2012).

Estimated Solar Cancellation Rates by Project Type

As of Month Ending	Capacity in Solar Project Pipeline							
	Completed Projects				Cancelled Projects			
	Net Metered	Grid-Connected	Net Metered	Grid-Connected	Net Metered	Grid-Connected	Net Metered	Grid-Connected
	(kW)							
Nov-10	115,633	34,681	58,882	6,222	66.26%	84.79%	69.78%	
Dec-10	104,043	35,629	58,340	6,222	64.07%	85.13%	68.39%	
Jan-11	113,533	32,044	66,943	6,631	62.91%	82.85%	66.43%	
Mar-11	194,304	21,467	79,863	6,631	70.87%	76.40%	71.38%	
Apr-11	208,952	21,467	87,407	6,631	70.51%	76.40%	71.02%	
May-11	252,743	21,467	121,124	6,631	67.60%	76.40%	68.22%	
Jun-11	248,771	20,553	150,755	6,631	62.27%	75.61%	63.12%	
Jul-11	238,838	46,672	129,047	31,052	64.92%	60.05%	64.07%	
Aug-11	224,548	77,556	153,922	59,314	59.33%	56.66%	58.62%	
Oct-11	240,390	76,297	153,367	72,397	61.05%	51.31%	58.38%	
Nov-11	235,105	71,156	150,743	72,397	60.93%	49.57%	57.85%	
Dec-11	231,523	62,102	148,442	72,397	60.93%	46.17%	57.07%	
Jan-12	213,355	19,260	144,937	72,397	59.55%	21.01%	51.70%	
Feb-12	197,044	16,330	135,322	71,987	59.29%	18.49%	50.72%	
Mar-12	172,904	13,119	108,365	71,987	61.47%	15.41%	50.77%	
Apr-12	145,195	9,405	99,794	71,987	59.27%	11.55%	47.37%	
Jun-12	105,268	6,756	87,739	57,897	54.54%	10.45%	43.48%	
Jul-12	89,284	5,375	54,250	57,897	62.20%	8.50%	45.77%	
Aug-12	70,334	5,375	52,087	40,479	57.45%	11.72%	44.99%	
Oct-12	35,155	1,073	19,050	7,003	64.86%	13.29%	58.17%	
					Average:	62.51%	46.59%	58.36%

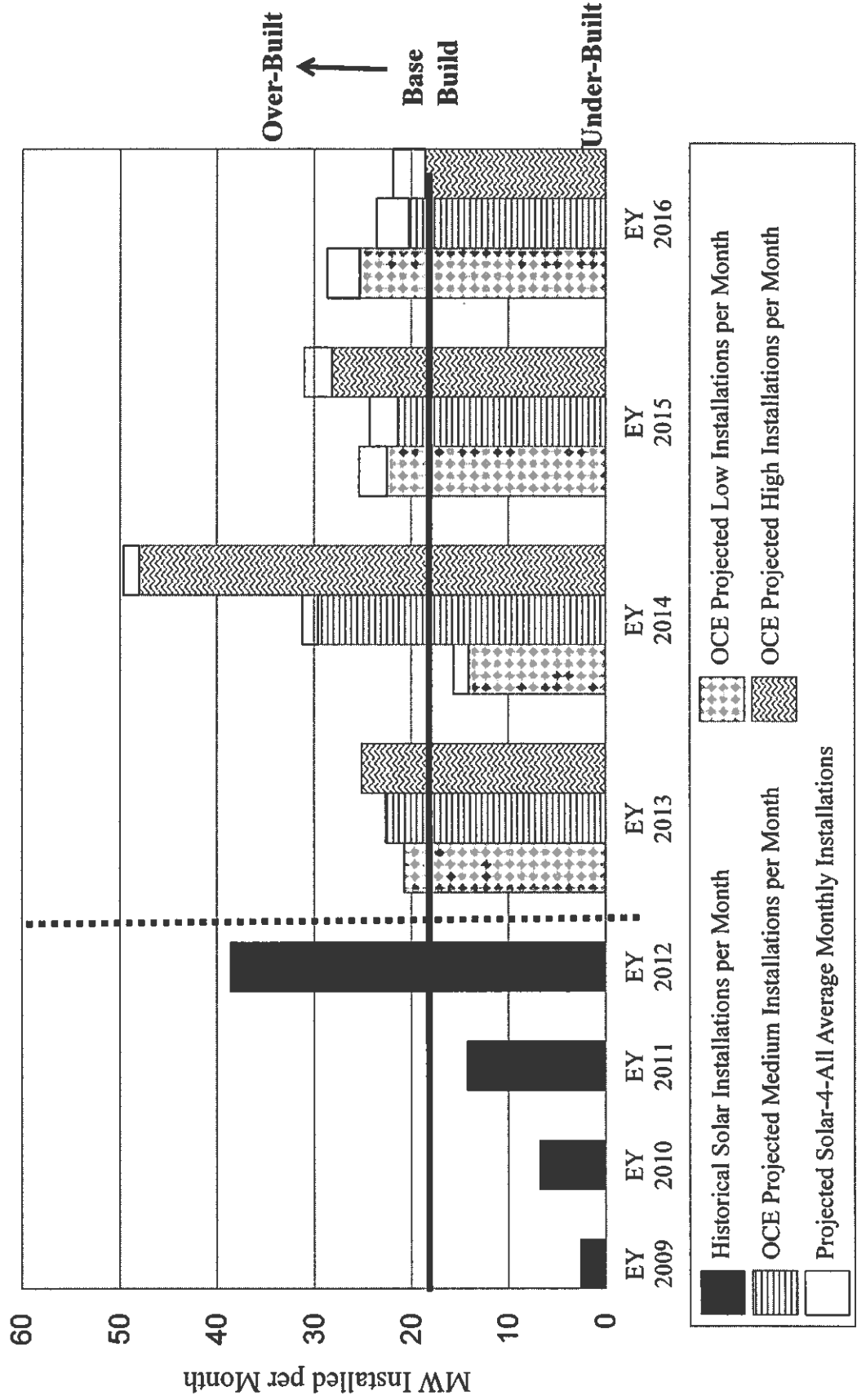
Source: Office of Clean Energy, Solar Installation Summary (as of Dec. 31, 2012) and Office of Clean Energy, Monthly Solar Projects Pipeline (month ending Nov. 2010 to month ending Oct. 2012).

Updated OCE Forecast, Historical Monthly Solar Installations



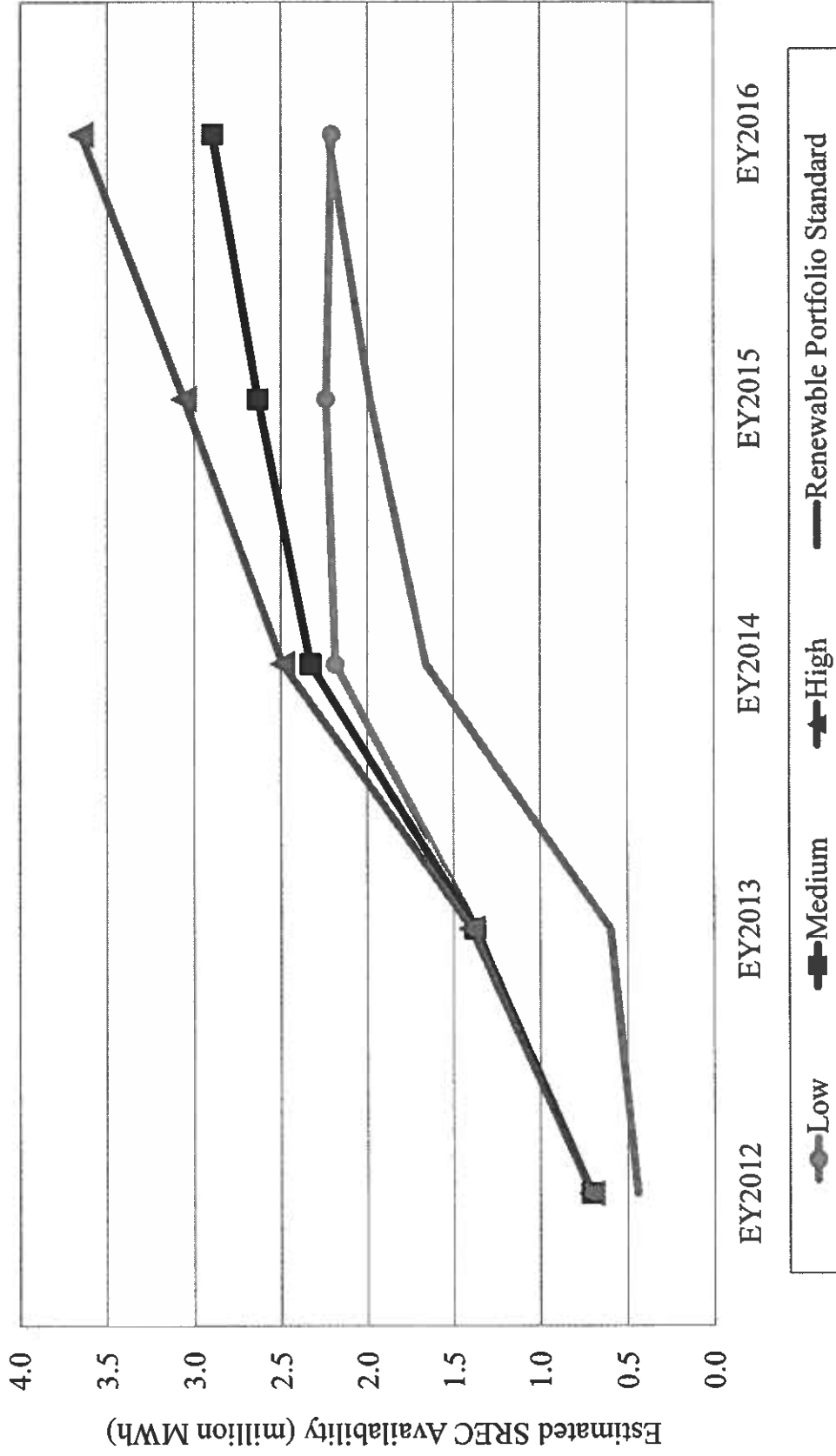
Source: Office of Clean Energy, Solar Installation Summary (as of Dec. 31, 2012).

Updated OCE Forecast, Projected Monthly Solar Installations



Source: Office of Clean Energy, Solar Installation Summary and Solar Installed Capacity Forecast (as of Dec. 31, 2012); and Company Response to RCR-A-15.

Updated OCE Forecast, SREC Availability



Source: Office of Clean Energy, Solar Installed Capacity Forecast (as of Dec. 31, 2012).

Updated OCE Forecast, SREC Availability

Witness: Dismukes
 BPU Docket No. EO12080726
 Schedule DED-SR-3
 Page 2 of 2

Energy Year		NJCEP Solar Generation Forecast			
		Item	Low	Medium	High
2012	OCE Projected SREC Availability (MWh)	704,688	704,688	704,688	
	NJ Solar RPS Requirement (MWh)	442,000	442,000	442,000	
	Percentage of RPS Requirement	159.43%	159.43%	159.43%	
2013	OCE Projected SREC Availability (MWh)	1,367,588	1,377,688	1,378,988	
	NJ Solar RPS Requirement (MWh)	596,000	596,000	596,000	
	Percentage of RPS Requirement	229.46%	231.16%	231.37%	
2014	OCE Projected SREC Availability (MWh)	2,102,788	2,255,788	2,441,388	
	NJ Solar RPS Requirement (MWh)	1,660,500	1,660,500	1,660,500	
	Percentage of RPS Requirement	126.64%	135.85%	147.03%	
2015	OCE Projected SREC Availability (MWh)	2,041,288	2,436,688	2,976,788	
	NJ Solar RPS Requirement (MWh)	1,984,500	1,984,500	1,984,500	
	Percentage of RPS Requirement	102.86%	122.79%	150.00%	
2016	OCE Projected SREC Availability (MWh)	2,001,588	2,592,688	3,519,088	
	NJ Solar RPS Requirement (MWh)	2,227,500	2,227,500	2,227,500	
	Percentage of RPS Requirement	89.86%	116.39%	157.98%	

Source: Office of Clean Energy, Solar Installed Capacity Forecast (as of Dec. 31, 2012).