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## NOTICE<sup>1</sup>

### **Monthly Report on Status toward Attainment of the 5.1% Milestone for Closure of the SREC Program**

March 31, 2020

Under rules adopted by the New Jersey Board of Public Utilities ("NJBP") at N.J.A.C. 14:8-2.4(b)6, the 5.1% Calculation Rule"), Staff is required to "report no later than the last business day of each month the estimated solar electricity generated over the previous 12 months." The final method of calculating the 5.1% Milestone was determined by the Board in an Order dated February 19, 2020.<sup>2</sup> Staff have provided forecasts dated February 7 and February 28 which are posted on the webpage devoted to the Clean Energy Act Solar Transition Proceeding.<sup>3</sup>

**Staff hereby provides notice that it forecasts that 5.1% of the kilowatt-hours sold in New Jersey will be supplied by qualified solar generation facilities ("5.1% Milestone") around or before May 2020.**

Staff notes that the forecast for attainment of the 5.1% Milestone has shifted forward since the January report forecast attainment in June 2020 and the February report forecast attainment in May/June 2020. Monthly retail electricity sales since June 2019 have consistently declined when compared to the same month one year earlier.

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<sup>1</sup>Not a Paid Legal Advertisement

<sup>2</sup> I/M/O a New Jersey Solar Transition Pursuant to P.L. 2018, c. 17 – Calculation of 5.1% Milestone for SREC Program Closure Docket No. QO19010068.

<sup>3</sup> <https://njcleanenergy.com/renewable-energy/program-updates-and-background-information/solar-proceedings>. Accessed March 26, 2020.

## **Calculation of the 5.1% Milestone**

As reflected in the 5.1% Calculation Rule, Staff is required to estimate the amount of solar electricity as a percentage of retail sales over the past twelve months and forecast the date of attainment of the 5.1% Milestone. In each illustrative calculation below, Staff uses the monthly cumulative installed solar capacity sourced from the NJ Clean Energy Program (“NJCEP”) Solar Installation Report. The calculated cumulative installed capacity at a given month’s end serves as the basis for estimating solar production in the following month using the appropriate monthly production factor.

In two prior 5.1% milestone reports, to forecast twelve months of solar production Staff used cumulative monthly installed capacity from the latest NJCEP Solar Installation Report (“NJCEP Report”) and added two future growth rate scenarios of 35 MWdc and 45 MWdc per month for the remaining months. Average monthly installed capacity growth at 35 MWdc per month and a high growth scenario of 45 MWdc for future months were used to provide a range of potential outcomes. For example, the NJCEP Report issued on March 18, 2020 showed 3,236 MWdc of cumulative installed capacity through January 31, 2020.

In this month’s 5.1% milestone report, the estimated solar electricity production for February is calculated by multiplying the month’s starting capacity of 3,236 MWdc by the monthly output factor of 84 MWh per MWdc. The estimate for cumulative installed solar capacity to start March 2020 of 3,271 MWdc (3,236 plus 35) is used to calculate the month of 5.1% Milestone attainment under an expectation of average growth in installed capacity. March 2020’s estimated solar electricity production is 3,271 MWdc multiplied by the monthly output factor of 102 MWh per MWdc.

Staff’s expected monthly solar production factors, in MWh per MWdc, are presented in Table A. The output factors were calculated using the National Renewable Energy Lab tool, PVWatts, based on the 10-year average of 1,154 MWh of solar per MW of installed solar provided by PJM-EIS.<sup>4</sup>

The aggregate sum of the products of the monthly output factors multiplied by the cumulative installed capacity reported through February 2020, and forecast through May 2020, form the numerator in the forecast of solar electricity generation as a percentage of statewide retail electricity sales. May 2020 statistics are reported in Table B. and Table C. below to illustrate the relative proximity of the 5.1% milestone within April.

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<sup>4</sup> For further information about the calculation of the monthly solar production factors in Table A, please see Staff’s Monthly Report on Status toward Attainment of the 5.1% Milestone for Closure of the SREC Program dated February 7, 2020 (available at the following link:

<https://njcleanenergy.com/files/file/Notice%20on%205-1%20Percent%20Milestone.pdf>)

Table A. Monthly Solar Output based on 10-year average annual solar productivity

Expected Monthly Output Factor		
Month	(MWH)	
June 2019	118	Monthly expected solar electricity production factors in Mwh per MWdc installed serve as a proxy for NJ fleetwide productivity based on the PJM-EIS NJ Solar Performance Analysis. Derived from PVWatts results for a 1 kWdc fixed roof mount system located in Trenton 08625 with 20 degree tilt and 180 degree azimuth, system losses of 26.25 percent and inverter efficiency of 96%.
July 2019	123	
Aug. 2019	115	
Sept. 2019	100	
Oct. 2019	84	
Nov. 2019	67	
Dec. 2019	58	
Jan. 2020	72	
Feb. 2020	84	
Mar. 2020	102	
Apr. 2020	113	
May 2020	118	
Total	1154	

Table B. Monthly Solar Output Factors applied to Reported and Forecast Solar Capacity (June 1, 2019 to May 31, 2020)

Month	Expected Solar Output Factor (MWh/MW)	<i>NJCEP Reported Capacity &amp; Growth</i>	Solar Productivity *(MWh)
		@ 35 MWdc at Month's Start (MWdc)	
June 2019	118	<b>2884</b>	340,312
July 2019	123	<b>2945</b>	362,235
Aug. 2019	115	<b>2982</b>	342,930
Sept. 2019	100	<b>3009</b>	300,900
Oct. 2019	84	<b>3063</b>	257,292
Nov. 2019	67	<b>3098</b>	207,566
Dec. 2019	58	<b>3125</b>	181,250
Jan. 2020	72	<b>3190</b>	229,680
Feb. 2020	84	<b>3236</b>	271,824
Mar. 2020	102	3271	333,642
Apr. 2020	113	3306	373,578
May 2020	118	3341	394,238
	<b>1154</b>		3,595,447

### Retail Sales

To estimate the amount of retail sales over the previous twelve months, in preparing this Notice, Staff used the 4.97% load reduction (or “line loss”) reported by TPS in the RPS compliance process for EY19 to the GATS-supplied statewide aggregate of “unadjusted load served.” Since the statute bases the 5.1% Milestone on retail electricity sales, Staff used a 4.97% line loss adjustment to convert wholesale sales to retail sales. The unadjusted load served by TPS and BGS Providers for the twelve months ending February 29, 2020, on a wholesale basis, was 74,031,990 MWh. Reducing that figure by 4.97% provides an estimate of retail sales of 70,352,600 MWh.

### **Results from the Application of Refined Assumptions**

Multiplying the monthly output factors identified in Table A by the actual and forecast cumulative installed capacity figures for the twelve-month period ending May 31, 2020 in Table B, results in an estimate of solar electricity generation of 3,595,447 MWh. Dividing the sum of each month’s estimated or forecast solar electricity production by the estimate or forecast of retail electricity sales results in the percentage of solar generated compared to retail sales over the previous twelve months.

With the revised inputs described above, Staff estimates that solar electricity generation over the twelve months ending on May 31, 2020 will be 5.11% of total retail kilowatt-hours sold.

Table C below illustrates how the application of solar output factors to installed capacity results in a monthly estimate of solar electricity generation and the progress toward attainment of the 5.1% Milestone when divided by a retail sales forecast. The table uses actual data available through February 2020 and forecasts for solar installation growth and retail sales growth through May 2020.

To show the sensitivity of the calculations to the rate of growth in solar installations, solar growth forecasts of 35 MWdc per month and 45 MWdc per month are shown for March through May 2020. For context, the March solar installation report showed that calendar year 2019 set a record for installed capacity of approximately 447 MWdc, a monthly average of 37.25 MWdc.

The estimated retail sales for the twelve-month period ending February 29, 2020 was used as the denominator in each monthly calculation of the percentage of attainment. For ease of calculating the percentage in future months, *i.e.*, March through May 2020, the estimated retail sales in these months use the estimated values from the corresponding months in the previous year. Staff anticipates that the trend for declining retail sales will continue and be accentuated by the state's response to the COVID-19 outbreak beginning in mid-March.

**Table C. Monthly Estimate / Forecast of Solar Electric as a Percentage of Retail Electricity Sales for the twelve months ending May 31, 2020.**

Scenarios Forecasting Fleetwide Solar Electric Generation as a Percent of Retail Sales in NJ (March 18, 2020)										
Monthly Solar Production	Historic Production Estimates			Average Future Installation Growth			High Future Installation Growth			
	Expected Solar Output Factor (MWh/MW)	Estimated Production by Month	NJCEP Reported Installed Capacity at Month Start (MW)	Production *(MWh)	NJCEP Reported Capacity @ 35 MW/mo. at Month's Start (MW)	Solar Productivity *(MWh)	% Solar MWh toward retail sales (%)	NJCEP Capacity & Growth @ 45 MW/mo. at Month's Start (MW)	Solar Productivity *(MWh)	% Solar MWh toward retail sales (%)
June 118	June 2018	<b>2,536</b>	299,248	June 2019	<b>2,884</b>	340,312	4.48%	<b>2,883</b>	340,194	4.48%
July 123	July 2018	<b>2,578</b>	317,094	July 2019	<b>2,945</b>	362,235	4.54%	<b>2,944</b>	362,112	4.54%
August 115	Aug. 2018	<b>2,596</b>	298,540	Aug. 2019	<b>2,982</b>	342,930	4.61%	<b>2,982</b>	342,930	4.61%
September 100	Sept. 2018	<b>2,626</b>	262,600	Sept. 2019	<b>3,009</b>	300,900	4.66%	<b>3,009</b>	300,900	4.66%
October 84	Oct. 2018	<b>2,643</b>	222,012	Oct. 2019	<b>3,063</b>	257,292	4.71%	<b>3,063</b>	257,292	4.71%
November 67	Nov. 2018	<b>2,682</b>	179,694	Nov. 2019	<b>3,098</b>	207,566	4.75%	<b>3,098</b>	207,566	4.75%
December 58	Dec. 2018	<b>2,704</b>	156,832	Dec. 2019	<b>3,125</b>	181,250	4.79%	<b>3,125</b>	181,250	4.79%
January 72	Jan. 2019	<b>2,743</b>	197,496	Jan. 2020	<b>3,190</b>	229,680	4.83%	<b>3,190</b>	229,680	4.83%
February 84	Feb. 2019	<b>2,773</b>	232,932	Feb. 2020	<b>3,236</b>	271,824	4.89%	<b>3,236</b>	271,824	4.89%
March 102	Mar. 2019	<b>2,809</b>	286,518	Mar. 2020	3,271	333,642	4.95%	3,281	334,662	4.96%
April 113	Apr. 2019	<b>2,836</b>	320,468	Apr. 2020	3,306	373,578	5.03%	3,326	375,838	5.03%
May 118	May 2019	<b>2,860</b>	337,480	May 2020	3,341	394,238	<b>5.11%</b>	3,371	397,778	<b>5.12%</b>
Annual Total** <b>1154</b>	EY19 Total	-	<b>3,110,914</b>	Total	-	3,595,447	-		3,602,026	-
	Total (8/18 - 7/19)		3,197,119							
	<b>EY19 (6/1/18 - 5/31/19) Solar as a % of Retail Sales</b>			<b>Sensitivity of Attainment Percentage to Solar Growth and Retail Sales</b>			<b>Average Solar Growth in the remainder of EY 20</b>			
	<b>Retail Sales Reported for Compliance</b>	<b>EY19 ending % solar</b>		<b>w/ EY20 Retail Sales Forecast</b>			<b>June 2020 % solar with growth at 35 MW*</b>			
	<b>Actual (MWh) 74,482,963</b>	<b>4.18%</b>		<b>9 Months Actual plus 3 Flat</b>	<b>70,352,600</b>		<b>5.193%</b>			
				12 Mos. Constant at EY 19's	74,482,963		<b>4.905%</b>			
	* Uses monthly beginning installed capacity with PTOs reported to NJCEP through 12.31.19 multiplied by monthly production factors consistent with PJM-EIS Data.			* NJCEP reported installed solar at 3236 MW on February 29, 2020 with installed capacity estimated to grow @ 35 MW per month and production factor used in the PJM-EIS Data						
	** PVWatts annual output values sum to 1154 MWh / MWdc.									
	Actual EY19 year end solar capacity = <b>2,883 MWdc</b>									
	The cumulative installed capacity for a given month forms the basis for calculating solar production in the following month. For example, the capacity reported through May 31, 2019 is used to estimate the June 2019 solar production. The production values provided above for August 2018 through June 2019 are added to the production estimate in the adjacent table for July 2019 to calculate the percentage of solar electricity in July 2019.									

*Aida Camacho-Welch*

Aida Camacho-Welch  
Secretary of the Board

Dated: March 31, 2020