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The NJ Solar Energy Industry: Boom, Correction And The Future - Part I

Sills Cummis & Gross P.C.

Article By
Kevin J. Moore
Sills Cummis & Gross P.C.

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Introduction

Over the past decade the State of New Jersey has enacted a series of statutes and regulations that have made it one of the most solar energy-friendly jurisdictions in the world. These statutes and regulations have led to a vibrant solar energy industry in New Jersey that creates many high-quality, local jobs while attracting national and international investment. However, the recent weakness in the **New Jersey Solar Renewable Energy Certificate ("SREC")** market and anticipated changes in both the New Jersey and federal incentive structures for solar energy pose very real threats to the continuing vibrancy of this industry.

Part I of this two-part article provides information about solar energy and describes the federal and New Jersey statutes and regulations that have led to the creation of New Jersey's strong solar energy industry. Part II of this article will describe the current threats to the industry and suggests possible policy solutions to these threats.

Information About Solar Energy

In this article **"solar energy" means the generation of electricity using photovoltaic ("PV") systems.** A PV system consists of PV modules and the related racking and mounting hardware for the PV Modules, an inverter or inverters to convert the electricity generated by the PV modules from direct current to alternating current, a transformer or transformers to increase the voltage and

amperage of the electricity to the levels required to connect to the electric distribution system of the local utility and the grid and a meter or meters to measure this electricity.

There are two broad types of PV systems. The first type of PV system only serves the electricity needs of the property, referred to as a "host" property, on which the PV system is located. This type of PV system is called an "on-site" or "behind-the-meter" PV system. In New Jersey, this type of PV system must comply with the state net metering regulations.[1] Therefore, the PV system's capacity to generate electricity and hence its size is limited to the annual electricity consumption of the host property.[2] The size of a PV system is measured in kilowatts ("kW") or megawatts ("MW"), and the electricity output of a PV system is measured in kilowatt hours ("kWh") or megawatt hours ("MWh").

The second category of PV system is referred to as a "solar farm" or an "in front of the meter" PV system. Solar farms feed the electricity that they generate directly into the regional power grid and do not provide electricity to their host properties. Therefore, the generation capacity of solar farms is not limited by net metering regulations, and solar farms can be very large, ranging in size from 500 kW to over 30 MW. In New Jersey, owners of solar farms must obtain the approval of the PJM Grid[3] and the local electric utility to connect to their electrical distribution systems. The owners of solar farms then sell the electricity they generate directly to the PJM Grid at the avoided cost of wholesale power[4] of the local electric utility in whose service area the solar farm is located.

Solar Energy Incentives

Currently it is less costly to generate electricity from fossil fuels than it is from PV systems. Therefore, PV systems are only economically viable if they are supported by a combination of federal tax-based incentives and the additional incentives available in certain states. While the federal incentives are critically important to the financial viability of a PV system, they are insufficient in and of themselves to make a PV system profitable. Accordingly, it is New Jersey's incentives and other solar-friendly regulations that have created the state's booming solar energy industry.

The Federal Tax-Based Incentives

However, since the federal tax-based incentives are part of an economically viable solar energy program, it is important to understand them. The federal tax-based incentives consist of a tax credit equal to 30 percent of the cost of a PV system,[5] which can be taken as a grant[6] and accelerated bonus depreciation of the cost of a PV system.[7] In order for a PV system owner to be eligible for the grant, known as a **"1603 grant,"** the owner of the PV system must start construction of the PV system on or before December 31, 2011 and make the application for the 1603 grant in time for the **Treasury Department** to receive it before October 1, 2012.[8]

In the case of the accelerated bonus depreciation, a PV system owner can depreciate

100 percent of its capital investment in the system, less half of the value of the 1603 grant, in one year for federal income tax purposes, provided that the PV system is placed in service on or before December 31, 2011.[9] If the PV system is placed in service after December 31, 2011 but before January 1, 2013, the PV system owner can depreciate 50 percent of its capital investment in the system in one year for federal income tax purposes and the other 50 percent of the cost of the PV system can be depreciated over five years.[10] If a PV system is placed in service on or after January 1, 2013, the PV system owner can depreciate 100 percent of its capital investment in the system over five years.[11]

Current New Jersey Statutes And Regulations

The keystone of New Jersey's solar energy incentive program is one of the most aggressive **renewable energy portfolio standards ("RPS") i**n the country. Specifically, in the "reporting year" that runs from June 1, 2011 to May 31, 2012, New Jersey electric utilities must generate 6.3 percent of the electricity they sell to consumers from Class I Renewable Energy Sources and generate 2.5 percent of the electricity they sell to consumers from Class II Renewable Energy Sources.[12] These requirements increase annually through 2021 at which time New Jersey electric utilities must generate 17.88 percent of the electricity they sell to consumers from Class I Renewable Energy Sources and generate 2.5 percent of the electricity they sell to consumers from Class II Renewable Energy Sources.[13] Additionally, New Jersey law requires that, starting in the June 2010 to May 31, 2011, the reporting year, electric utilities must generate at least 306 Gigawatt hours ("Gwhrs") of electric power from solar energy sources, increasing to 5,316 Gwhrs in the June 2026 to May 31, 2027 reporting year.[14]

If an electric utility does not meet its RPS in a particular year, it must pay a solar alternative compliance payment ("SACP") for each MWh by which it fails to meet its solar energy generation requirement,[15] and an alternative compliance payment ("ACP") for each MWh by which it fails to meet the Class I and Class II energy generation requirements.[16]

The **New Jersey Board of Public Utilities ("BPU")** sets the SACP and ACP amounts.[17] In the reporting year June 1, 2011 to May 31, 2012, the SCAP amount is $658.00.[18] The SCAP amount decreases each year.[19] The BPU has set the SACP amount for each reporting year through May 31, 2016 at which time it will be $594.00.[20] The BPU is required to set SACP amounts through 2026[21] but has not yet done so.

In lieu of paying the SACP and ACP, an electric utility can purchase solar renewable energy certificates to meet not only its solar RPS but also its Class I and Class II Renewable Energy RPS.[22] The owner of an on-site PV system that complies with the New Jersey net metering requirements and the owner of a solar farm that is connected to the PJM grid receives an SREC for each MWh of electricity that its system generates. The PV system owner can then sell these SRECs either directly or indirectly to an electric utility to assist it in meeting its RPS. These SRECs have

been the primary driver of New Jersey's solar energy industry.

While New Jersey's RPS standards are the primary driver of solar energy in New Jersey, the state has also enacted a series of other solar-friendly laws and regulations. First, New Jersey has a net metering program. Under this program, if an on-site PV system generates less electricity than its host property requires at a particular time, the property automatically receives and pays for power from the local electric utility. However, if the on-site PV system generates more electricity than the host property consumes in a given year, the local electric utility pays the host property owner for this excess electricity at the local utility's avoided cost of wholesale power.[23]

Second, on-site PV systems are exempt from local real estate taxes.[24] Third, all PV systems and their components are exempt from New Jersey state sales tax.[25] Fourth, the sale of the electricity from an on-site PV system owner to the property owner host, but not its tenants, is exempt from New Jersey state sales tax.[26] Fifth, the PV modules of PV systems cannot be included as impervious coverage for the impervious coverage regulations of New Jersey municipalities and environmental agencies.[27] Sixth, PV systems must be permitted by local zoning ordinances on all industrially zoned tracts of land of 20 contiguous acres or more under common ownership.[28] Finally, even in those zones where PV systems are not permitted uses, they are inherently beneficial uses,[29] which significantly lowers the standards to obtain use variances to install and operate them.[30]

These solar-friendly laws and regulations have made New Jersey a leader in solar energy. The second installment of this article will explore the forces that threaten this leadership and will suggest ways to address them.

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1 N.J.A.C. 14:8-4.1 et seq.
2 See N.J.A.C. 14:8-4.3(a).
3 The PJM Grid is the regional power grid serving New Jersey.
4 "Avoided cost of wholesale power" means the average locational marginal price of energy in the applicable utility's transmission zone." N.J.A.C. 14:8-4.2.
5 See 26 U.S.C. § 48 of the Internal Revenue Code.
6 See Section 1603 of the American Recovery and Reinvestment Tax Act of 2009, as extended by Section 707 of the Tax Relief, Unemployment Insurance Reauthorization, and Job creation Act of 2010.
7 See 26 U.S.C. § 168 of the Internal Revenue Code; Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010.
8 See "Payments for Specified Energy Property in Lieu of Tax Credits under the American Recovery and Reinvestment Act of 2009," dated July 2009 and revised in March 2010 and January 2011, issued by the Office of the Fiscal Assistant Secretary of the United States Treasury Department.
9 See Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010.
10 See Tax Relief, Unemployment Insurance Reauthorization, and Job creation Act of 2010; 26 U.S.C. § 168 of the Internal Revenue Code.
11 See 26 U.S.C. § 168 of the Internal Revenue Code.

12 See N.J.A.C. 14:8-2.3(a).
13 See id.
14 See N.J.A.C. 14:8-2.3(j).
15 See N.J.A.C. 14:8-2.3(c)2.
16 See N.J.A.C. 14:8-2.3(d).
17 See N.J.A.C. 14:8-2.
18 See N.J.A.C. 14:8-2, Table C.
19 See id.
20 See id.
21 See N.J.S.A. 48:3-87.j.
22 See N.J.A.C. 14:8-2.3(f)1.
23 See N.J.A.C. 14:8-4.3(c)-(e).
24 See N.J.S.A. 54:4-3.113b.
25 See N.J.S.A. 54:32B-8.33
26 See N.J.S.A. 54:32B-8.46.
27 See e.g. N.J.S.A. 12:5-3; N.J.S.A. 13:18A-5.2; N.J.S.A. 13:20-3; N.J.S.A. 13:20-29; N.J.S.A. 40:55D-38.1; N.J.S.A. 40:55D-95.
28 See N.J.S.A. 40:55D-66.11.
29 See N.J.S.A. 40:55D-4.
30 See Sica v. Board of Adjustment of the Township of Wall, 127 N.J. 152 (1992).

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