

- Set a fixed target for solar photovoltaics at 2,120 GWhs by 2020;
- Develop New Jersey's offshore wind energy resources to achieve 1,000 MW of installed capacity of Offshore Wind by 2012 and 3,000 MW by 2020;
- Develop New Jersey's onshore wind energy resources to achieve up to 200 MW of onshore wind by 2020; and
- Develop 900 MW of biofuels and biomass as part of the State's 2020 RPS.

Together, it is estimated that these renewable energy goals will provide more than 20,000 GWh of clean and renewable electricity generation for the State's consumers by 2020. Based on projected reductions in energy consumption and the EMP's cogeneration goals, the total demand for electricity supply in the State may be as low as 68,300 GWh in 2020. This would result in renewable energy generation supplying approximately 30% of the State's overall electricity demand.

During 2009, a number of significant rule changes and draft stakeholder proposals were issued for discussion in support of the EMP goals. It should be noted that the Board has not proceeded with these proposals and will continue to engage stakeholders before developing any further proposed changes.

RPS Amendments for Offshore Wind Carve-out (N.J.A.C. 14:8) The Board released a draft rule titled *DRAFT Offshore Wind Financing Stakeholder Proposal* on July 1, 2009 for stakeholder review and comment. This rule proposal reflects Staff's recommendations for amendments to New Jersey's Renewable Portfolio Standards (N.J.A.C. 14:8 -1.2 to 2.14) to establish an offshore wind production target and a schedule as well as a financing structure based on a fixed price Offshore Wind Renewable Energy Certificate (OREC). The Board has deferred further work on this rule pending input from the new Governor on the offshore wind financing program.

RPS Amendment for Conversion from Percentage to 2,120 GWh Solar Requirement (N.J.A.C. 14:8-2) A draft proposal for stakeholder comment was circulated July 9, 2009 that would change the solar energy requirements of the RPS (N.J.A.C. 14:8-2) from an annual percentage of retail load to a fixed production requirement. A fixed solar production requirement would remain constant despite reduced energy demand. This change would provide greater surety to the solar industry about the amount of installed capacity needed to reach annual targets and the EMP target of 2,120 GWhs by 2020. The stakeholder draft also proposes a methodology to integrate a fixed GWh requirement into the BGS auction. BGS electric providers and third party suppliers have proposed alternate methodologies to minimize price risk which are under review.

Other draft stakeholder proposals to revise the RPS rule related to solar requirements (N.J.A.C. 14:8) Consistent with stakeholder recommendations to strengthen the veracity of RECs and the RPS, staff proposed the removal of the option for small solar PV systems to use engineering estimates to measure generation for SREC creation and require the installation and use of ANSI revenue grade meters. A solar registration requirement has also been proposed to provide notification of when a system is scheduled to come online and other key milestones thus improving the market's ability to track and make investment decisions based upon on solar projects in the pipeline. Staff will continue meeting with the EDCs, PJM-EIS GATS, solar

industry representatives and the interested public to proceed with a fully metered SREC verification system.

Net Metering and Interconnection Rule Amendments for Class 1 Renewable Energy Systems at (N.J.A.C. 14:8-4) The Board adopted amendments to the net metering and interconnection rules and concurrently proposed rule changes on December 1, 2009. The rule proposal removes a two megawatt limit on the size of a renewable energy generating unit that is eligible for net metering while maintaining the annual onsite consumption limit. A 2 MW limit on net metering was originally adopted when net metering was statutorily limited to residential and small commercial customers. Recent amendments to N.J.S.A. 48:3-87 expanded net metering to all customers, which make it possible that a very large electricity customer, such as a hospital or factory, could generate more than 2 MW of electricity without exceeding its average electricity usage. To accommodate this, the Board has proposed to lift the 2 MW limit, thus making the rules more consistent with the statutory amendments. It should be noted that the removal of the Board's 2 MW cap does not exempt customer-generators from the annual onsite consumption limitation as well as additional limits on net metering imposed by PJM Interconnection, or resulting from logistical and technical realities. The rule proposal was scheduled for publication in the New Jersey Register on January 4, 2010 with sixty day public period and a public hearing in February 2010. The recently enacted Solar Security Act eliminates the 2 MW cap.

RPS Amendment for 30% by 2020 and extension to 2025(N.J.A.C. 14:8) – DRAFT 30% RPS Analysis was circulated September 18, 2009 for discussion in stakeholder meetings. The DRAFT Analysis includes all the additional targets for solar, wind and biomass which will account for most of the additional renewables required to meet the 30% target. Further input will be sought on extending the RPS out to 2025 after public release of a detailed cost benefit analysis performed by Rutgers Center for Energy, Economic and Environmental Policy..

RPS Amendment to enable a Community Renewable Program (N.J.A.C. 14:8) - The Board directed staff to explore the feasibility of establishing a Community Renewable Program as a means to offer residents and businesses expanded access to renewable energy technologies and provide improved project financials that will benefit both consumers and ratepayers. A *Request for Comments on Proposed Criteria for a Community Renewables Pilot Program* was circulated. Board staff's recommendation was to support multiple platforms including aggregated net metering to foster community renewables across a range of Class I Renewable Energy technologies and for all classes of customers. Proceedings are on hold pending legislative action on SB [S2535](#) which would mandate community net metering.

Recently enacted legislation that affects the RPS (N.J.A.C. 14:8) - The "Solar Energy Advancement and Fair Competition Act", A3520/S441, approved P.L.2009, c.289, signed January 17, 2010 contains three key provisions that would give more surety to the solar market. The first provision sets forth that once the Board adopts an RPS; it can raise but not lower the minimum requirements. Secondly, once the Board adopts an SACP it can raise but not lower previously approved levels. The final provision states that once the Board approves a utility long term contract for the purchase of SRECs the Board shall not modify such approval. The legislation would provide considerable regulatory certainty by allowing a future Board to increase but not decrease the RPS minimums or SACP levels, thereby preventing a future Board from

“backsliding” on the RPS requirements. This has been a significant issue with the solar industry and would be a major benefit to market development.

Potential Issues with Federal RPS Proposals. Federal consideration of comprehensive energy and climate change legislation will likely be postponed until Spring 2010. The Waxman-Markey climate bill, which passed the House of Representatives in June 2009, contains a Renewable Energy Standard (RES) calling for 20 percent by 2020. The details of a federal Renewable Energy Standard still need to be worked out to ensure compatibility with State RPS provisions especially in terms of the interaction of Federal and State standards. While most versions of the Federal RES respect state rights and include provisions for states to set an requirement higher than the federal standards, there are still questions about dual tracking systems, allocation of compliance payments and retirement of RECs to ensure against double counting.

b. Expected Results from RPS requirements for Reporting Year 2010

The RPS percentage requirements for RY10 are 0.2210% for solar, 4.685% for NJ Class I, and 2.5% for NJ Class II. If the annual retail sales in NJ’s four EDC territories for RY10 remain at 81.5 million MWh, then regulated entities will be required to procure approximately 180,000 SRECs, 3.8 million NJ Class I RECs and 2 million NJ Class II RECs.

As of December 31, 2009, the state had nearly 5,000 solar PV installations for 126 MWdc in total capacity (Table 8). New Jersey’s aggregated solar capacity produces, over twelve months, approximately 1,200 kWh per kWdc installed. The difficulty in forecasting the amount of solar electricity likely to be produced in a given reporting year, and the supply of SRECs available, lies with estimating the contribution from systems which come online throughout the reporting year. In order to estimate the cumulative amount of solar generation and SREC production during the reporting year, it is necessary to estimate the amount of full year generation from systems already installed as of the beginning of the reporting year plus the part year generation from systems anticipated to be installed during the remainder of the reporting year.

Table 8. NJ Solar Installations 2001 to 2009

Install Year	Rebate Program; CORE and REIP			SREC-only Pilot and SREC Registration Program		Total kW	Cumulative Installed Capacity (kW)
	# Projects	Rebated kW	Total Rebate (\$)	# Projects	Non-rebated kW		
2001	3	7.5	\$37,145			7.5	7.5
2002	37	623.5	\$2,424,694			623.5	631.0
2003	95	1,176.6	\$5,323,411			1,176.6	1,807.6
2004	289	2,037.1	\$10,581,975			2,037.1	3,844.7
2005	729	9,908.1	\$46,235,897			9,908.1	13,752.8
2006	867	18,320.4	\$78,086,786			18,320.4	32,073.2
2007	691	15,245.5	\$58,122,386	2	12.8	15,258.3	47,331.5
2008	778	14,287.3	\$44,962,462	57	8,433.2	22,720.5	70,052.0
2009	1245	21,942.4	\$57,817,799	101	34,269.5	56,211.8	126,263.8
Totals	4734	83,548.3	\$303,592,555	160	42,715.4	126,263.7	-

The following example is for illustration purposes only to document the challenges in forecasting SREC supply availability given the variables active in determining actual solar and SREC supply in New Jersey. Many assumptions have been used in this example that are subject to change such as the productivity of solar PV which is based upon solar insolation, system efficiencies, the number of systems and pace at which they become operational or cancel, etc. The Office of Clean Energy recommends that any solar marketer, supplier, or installer of solar system operate consult several sources of information in order to estimate the SREC market supply.

The total installed capacity on June 1, 2009; the beginning of Reporting Year 2010 was 87.2 MWdc. Given NJ's solar productivity at 1,200 kWh per kWdc, the 87.2 MWdc of capacity is expected to produce approximately 105,000 MWh and provide 105,000 SRECs in RY10. The Office of Clean Energy forecasts approximately 69 MW of capacity will be installed through the SREC registration and the NJCEP rebate programs in RY10 which will produce roughly 35,000 MWh and contribute an additional 35,000 SRECs in RY10. As a result, the total SREC production for RY10 is forecast to be nearly 140,000 SRECs. This estimate assumes approximately 105,000 SRECs produced over a full year from the installations operational as of June 1, 2009 plus 35,000 additional SRECs from the partial year production of projects installed during the reporting year. This would leave a shortfall of approximately 40,000 SRECs which will have to be met by regulated entities through the payment of SACPs.

Table 9, 10 and 11 below shows active solar rebate commitments in New Jersey's Clean Energy Program, as of December 31, 2009. This data is provided to demonstrate the project pipeline for NJ solar projects that was used to derive the forecast capacity additions during RY10.

Table 9. CORE Program			
Committed Solar Projects by Status As of 12/31/09			
Status	Project Qty	System Size (KW dc)	Rebate Amount
Approved	443	28,573	\$ 54,087,223
QC Selected	178	6,466	\$ 18,803,349
Ready for Rebate	22	404	\$ 1,479,657
Processing Rebate	30	584	\$ 1,901,428
Grand Total	673	36,028	\$ 76,271,656

The projects that have attained the status of QC Selected, Ready for Rebate and Processing Rebate are included in the Installed Project Report totals that are reported separately.

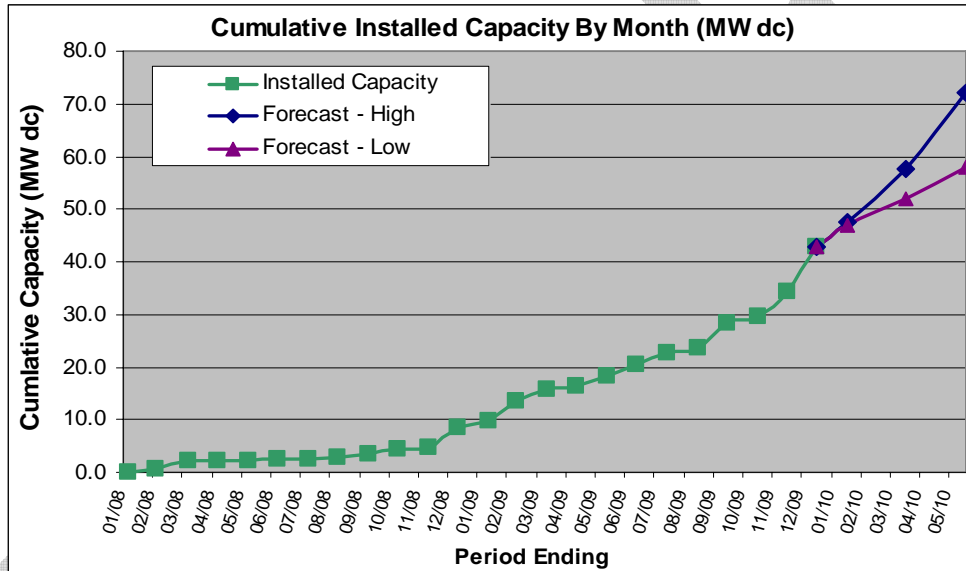
Table 10. Renewable Energy Incentive Program			
Committed Solar Projects by Status As of 12/31/09			
Status	Project Qty	System Size (KW dc)	Rebate Amount
Approved	1,307	15,628	\$ 21,512,296
QC Selected	298	2,823	\$ 4,261,220
Ready for Rebate	-	-	\$ -
Processing Rebate	182	1,454	\$ 2,360,783
Grand Total	1,787	19,904	\$ 28,134,299

The projects that have attained the status of QC Selected, Ready for Rebate and Processing Rebate are included in the Installed Project Report totals that are reported separately.

Table 11. SREC Registration Program

Solar Project Status as of 12/31/09

Status	Project Qty	System Size (DC KW)
Application Review	1	140.5
Approved	222	54,168.2
Active Projects	223	54,308.7
Active Projects includes approved applications and applications under review.		
QC Selected	33	12,587.8
Complete	127	30,127.7
Installed Projects	160	42,715.4
Installed Projects includes completed projects and projects that have submitted final paperwork and are ready for inspection (QC Selected).		
Total Projects	383	97,024.1



The ability to forecast results for NJ Class I and Class II compliance markets in RY10 is even more challenging than analyzing the NJ SREC market. Unlike the strict SREC requirements of connection to the distribution system serving New Jersey for solar facility eligible, NJ Class I and Class II compliance RECs can be sourced from eligible facilities anywhere throughout the PJM Interconnect region provided the electricity is dynamically scheduled. Appendix 5 shows how the supply of NJ Class I RECs, both by fuel type and source state, have changed since RY06. In RY09, Illinois wind facilities continued to dominate the NJ Class I REC market having overtaken in RY08 the position of top supplier previously enjoyed by Pennsylvania landfill gas facilities. Future demand for Class I and Class II RECs is also difficult to forecast as a result of the array of RPS regulations in states throughout the PJM territory with each state and in some cases utilities within states on a different timetable.

Unlike the SREC market analysis, the NJ Class I REC supply is not as strongly influenced by the capacity additions from the NJCEP rebate or grant programs. Table 12 shows that the NJCEP incentive programs have contributed nearly 37 MW of NJ Class I eligible projects. By comparison, the capacity of NJ certified Class I facilities from the other PJM states was 5,887 MW as of January 1, 2009. According to the American Wind Energy Association (AWEA), states within the PJM region added over 1,000 MWs of new wind capacity in 2009 (AWEA Year End 2009 Market Report, www.awea.org/publications/reports/4Q09.pdf, accessed January 26, 2010).

Table 12. NJCEP Wind and Biomass Projects

Installed by Program since 2001

NJCEP Biomass Installation Projects by Program Installed Projects 2001 to 12/31/2009			
Program	# Projects	Total kW	Total Rebate \$
CORE Rebate	11	7,971.0	\$ 6,085,399
Grid Supply / REAP	4	21,150.0	\$ 7,113,225
Total*	15	29,121.0	\$ 13,198,624

NJCEP Wind Installation Projects by Program Installed Projects 2001 to 12/31/2009			
Program	# Projects	Total kW	Total Rebate \$
CORE Rebate	21	2,875.1	\$ 2,552,394
REIP Rebate	5	52.8	\$ 165,813
Grid Supply / REAP	1	4,875.0	\$ 1,700,000
Total*	27	7,802.9	\$ 4,418,207

Total Wind and Bio	42	36,923.87	\$ 17,616,831
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Total* = Program to date totals for paid projects plus projects pending payment; preliminary results subject to true-up based upon inspection results.

Adding further to the REC supply forecast challenge, the estimation of MWh production from installed capacity, and hence forecasting the NJ Class I REC creation from the PJM-wide resources, cannot be accurately accomplished using a protocol for statewide aggregated capacity since wind and biomass installation capacity factors are more widely variable.

Appendix 6 shows how the supply of NJ Class II RECs, both by fuel type and source state, have changed since RY06. NJ MSW facilities contributed the greatest number of Class II RECs used for RPS compliance in RY09.

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Appendix 6. Class II RECs retired for compliance with NJ RPS by State and Fuel Type

Appendix 7. Class I and II RECs retired for NJ RPS Compliance by Source State