

New Jersey

# Solar and Wind Incentives in New Jersey

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## NJBPU's role in Renewable Energy Market Development

- Established the Office of Clean Energy to manage New Jersey's Clean Energy Program (NJCEP) in 2003
- Serves as the State Energy Office for NJ
- Coordinates the State Energy Master Plan



## NJ's Renewable Energy Policy Framework

- Electric Discount and Energy Competition Act of 1999 (EDECA)
  - Societal Benefits Charge / CRA process for EE and RE Funding
  - Definition of Class I Renewable Energy
  - Renewable Portfolio Standards
  - Net Metering and Interconnection
- New Jersey's Energy Master Plan
- Global Warming Response Act
- Solar Advancement Act of 2009 (Section 3 P.L.1999 c.23)....





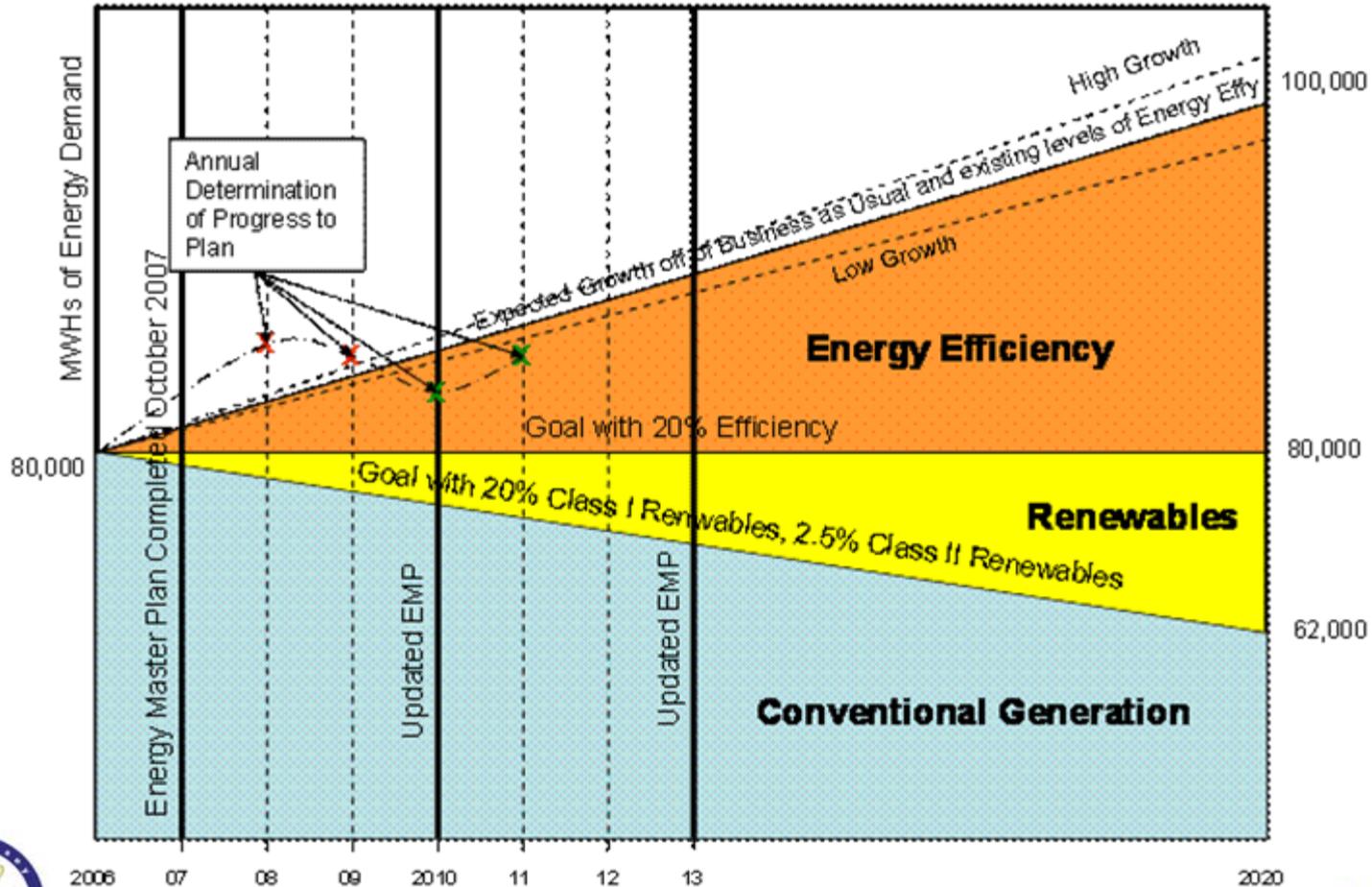
## 20% reduction in energy use by 2020

20,000,000 MWh – 25% by codes & 75% EE

- Most Recent Public Release October 2008
- Recommended change RPS from 20% Class I Renewables by 2020 to 30% by 2025: via 3000 MW offshore wind, 900 MW of biomass, and 200 mw of onshore wind
- Change RPS solar obligation from % to GWh (i.e., 2020 was 2.12%, now 2,164 GWh)
- Gov. Christie ordered BPU & DEP review goals under updated assumptions in March 2010, Task Force assembled, stakeholder meeting held, expect release of results in Winter/Spring 2011



## NJBPU EMP Planning Approach



## Putting Market Transformation Policies into Practice:

### NJ Renewable Energy “Financing” – Motivating Investment

- **SBC Funds (NJCEP Rebates, Grants, and other Incentives)**
- **Fed Tax Credits**
- **Electric Cost Savings via Net Metering & Interconnection**
- **Renewable Energy Certificates (RECs) via RPS**
- **“Solar Financing”, Long-term Contracting or Loans via Electric Distribution Companies (EDCs)**
- **Private Capital / Out of Pocket**



## Financial Structure for a Typical 10 kw Solar Electric System - Market Transformation Example 2005/06

Installed Cost: **\$77,500**

NJCEP Rebate:  
**\$43,500**

Federal Tax  
Credit: \$2,000

Out of Pocket  
Expense: \$32,000



Electric cost savings  
(net metering) :  
>\$1,400 / yr

12,000 kWh @ \$ 0.14

**SREC** Income:  
>\$1,800 / yr

12 SRECs @ \$150

Total Annual  
Savings:  
>\$3,200

**Payback Period: < 10 yrs**



## Societal Benefit Charge Funding for Renewables; NJCEP Rebates and Grants for NJ Ratepayers

<b>NJCEP Renewable Energy Technologies</b>			
<b>Installed Projects 2001 to 12/31/2010</b>			
<b>Technology</b>	<b># Projects</b>	<b>Total kW</b>	<b>Total Rebate \$</b>
Solar	8,037	259,674.3	\$ 349,578,777
Biomass	17	30,905.0	\$ 14,188,624
Fuel Cell	8	1,505.0	\$ 4,707,312
Wind	33	7,899.1	\$ 4,717,522
<b>Total*</b>	<b>8,095</b>	<b>299,983.3</b>	<b>\$ 373,192,234</b>



## *NJ's RPS – Revised May 2006 from Interim April 2004 (20% by 2020 with 2.12% solar)*

Reporting Year	SolarPV - NJ			RE Class I – PJM wide		
June – May 31, XX	% Retail Sales	New MWs	SACP	% Retail Sale	New MWs	ACP
2005	0.01	4	\$300	0.74	1.6	\$50
2006	0.017	4	\$300	0.983	19	\$50
2007	0.0393	14	\$300	2.037	38	\$50
2008	0.0817	27	\$300	2.924	66	\$50
2009	0.16	39	-	3.84	89	\$50



## NJRPS Compliance Costs – Class I RE RECs and ACPs: Reporting Years 2005 thru 2010

Compliance Period	RY 2005	RY 2006	RY 2007	RY 2008	RY 2009	RY 2010
Total Retail Sales of Regulated LSEs (MWh)	73,674,845	84,353,329	83,314,518	80,028,793	81,416,156	77,418,756
Class I RPS Percentage Requirement	0.74%	0.983%	2.037%	2.924%	3.84%	4.685%
Class I REC Obligation (MWh)	545,194	834,832	1,697,117	2,340,042	3,126,380	3,627,069
Class I RECs Retired for RPS (MWh)	527,160	845,702	1,697,364	2,341,702	3,127,491	3,627,074
Average NJ Class I REC Price	\$7.50	\$7.50	\$8	\$20	\$12	\$3
Estimated Dollar Value of Class I RECs Retired	\$3,953,700	\$6,342,765	\$13,578,912	\$46,834,040	\$37,529,892	\$9,968,187
Class I ACPs Submitted (MWh)	0	19	539	200	0	3
ACP Level (\$ per MWh)	\$50	\$50	\$50	\$50	\$50	\$50
Cost of Class I ACPs (\$)	\$0	\$950	\$26,950	\$10,000	\$0	\$150
Estimated Class I RPS Expenditures (ACP + REC)	\$3,953,700	\$6,343,715	\$13,605,862	\$46,844,040	\$37,529,892	\$9,968,337



## NJRPS Compliance Costs – Solar PV

### Solar REC and SACP Reporting Year 2005 thru 2010

Compliance Period	RY 2005	RY 2006	RY 2007	RY 2008	RY 2009	RY 2010
Total Retail Sales of Regulated LSEs (MWh)	73,674,845	84,353,329	83,314,518	80,028,793	81,416,156	77,418,756
Retail Sales Obligated by RPS for solar (+)	57,140,000	61,470,091	83,314,518	80,028,793	81,416,156	77,418,756
Solar Percentage Requirement	0.01%	0.017%	0.0393%	0.0817%	0.16%	0.221%
SREC Obligation (MWh)	5,714	10,450	32,743	65,384	130,266	171,095
SRECs Retired for RPS (MWh)	3,329	10,723	31,541	49,617	75,532	123,717
Percentage of Obligation met via SRECs	58.26%	102.61%	96.33%	75.89%	57.98%	72.31%
Year End Cumulative Weighted Average Price	\$200.59	\$215.09	\$220.28	\$246.15	\$544.85	\$615.50
Estimated Dollar Value of SRECs Retired	\$667,764	\$2,306,410	\$6,947,851	\$12,213,225	\$41,153,610	\$76,147,814
SACPs Submitted (MWh)	2,653	163	1,232	15,768	54,738	47,372
SACP Level (\$ per MWh)	\$300	\$300	\$300	\$300	\$711	\$693
Percentage of Obligation met via SACPs	46.43%	1.56%	3.76%	24.12%	42.02%	27.69%
SACPs Submitted(\$)	\$792,132	\$48,900	\$369,600	\$4,730,400	\$38,918,718	\$32,828,160
Compliance on a Percentage Basis	104.69%	104.17%	100.09%	100.00%	100.00%	100.00%
Estimated Solar RPS Expenditures (SACP + SREC)	\$1,459,896	\$2,355,310	\$7,317,451	\$16,943,625	\$80,072,328	\$108,975,974



## NJ Solar Market Transition

**RPS Rule Amendments adopted December 2009**

**proposed 03/16/09 as directed by Board Order 09/12/07**

- SREC Qualification Life: 15 Years
- SREC Vintage: 2 Years
- SACP Schedule: 8 Year rolling SACP (2009 -2012)
- Annual percentage decrease in SACP Levels: ~3%
- SREC-Only Pilot (renamed SREC Registration Process)
- Rebates for smaller projects (2009 -2012)
- SREC Securitization



**Financing Model: Competitive, Multiple Year SACP for Solar Renewable Certificates w Rebates for Smaller Systems**

**Mkt. Target IRR: 12% representative rate based on historic financials**

**SREC Life : 15 years**

**SACP Schedule: 8 year rolling Solar Alternate Compliance Payment**

**Safety valve: 2 % annual rate cap and capacity cap at 1500 MW**

## SACP 2009 - 2017

Energy Yr	2009	2010	2011	2012	2013	2014	2016	2017
\$/MWh	\$711	\$693	\$675	\$658	\$641	\$625	\$609	\$594



## **Setting the SACP Schedule in 2006/2007**

**Assumed: Observed to Date Market Diversity, Cost Reductions, and An Average / Target IRR: 12%**

### **SREC Levels Required to Achieve Target IRR**

RY	2009	2010	2011	2012	2013	2014	2015	2016
SREC	\$611	\$593	\$575	\$558	\$541	\$525	\$509	\$494

### **...therefore Approved 8 Year SACP Schedule**

RY	2009	2010	2011	2012	2013	2014	2015	2016
SACP	\$711	\$693	\$675	\$658	\$641	\$625	\$609	\$594



## Financial Structure for a Typical 10 kw Solar Electric System - NJ Market Transformation Example 2011

Installed Cost: **\$65,000**

Electric cost savings  
(net metering) :  
>\$2,000 / yr

12,000 kWh @ \$ 0.17

NJCEP Rebate:  
**\$0**

**SREC** Income:  
>\$4,800 / yr

12 SRECs @ \$400

Federal Tax  
Credit (30%):  
\$19,500

Total Annual  
Savings:  
>\$6,800

Out of Pocket  
Expense: \$45,500



**Payback Period: < 10 yrs**



## NJ Solar Projects by Program Source; Rebated and Non-Rebated

### NJCEP Solar Installation Projects by Program

Installed Projects 2001 to 12/31/2010

Program	# Projects	Total kW	Total Rebate \$
CORE Solar	4,263	86,132.0	\$ 311,562,409
REIP Solar	2,701	27,775.9	\$ 38,016,368
SREC Solar	1,073	145,766.4	\$ -
<b>Total*</b>	<b>8,037</b>	<b>259,674.3</b>	<b>\$ 349,578,777</b>

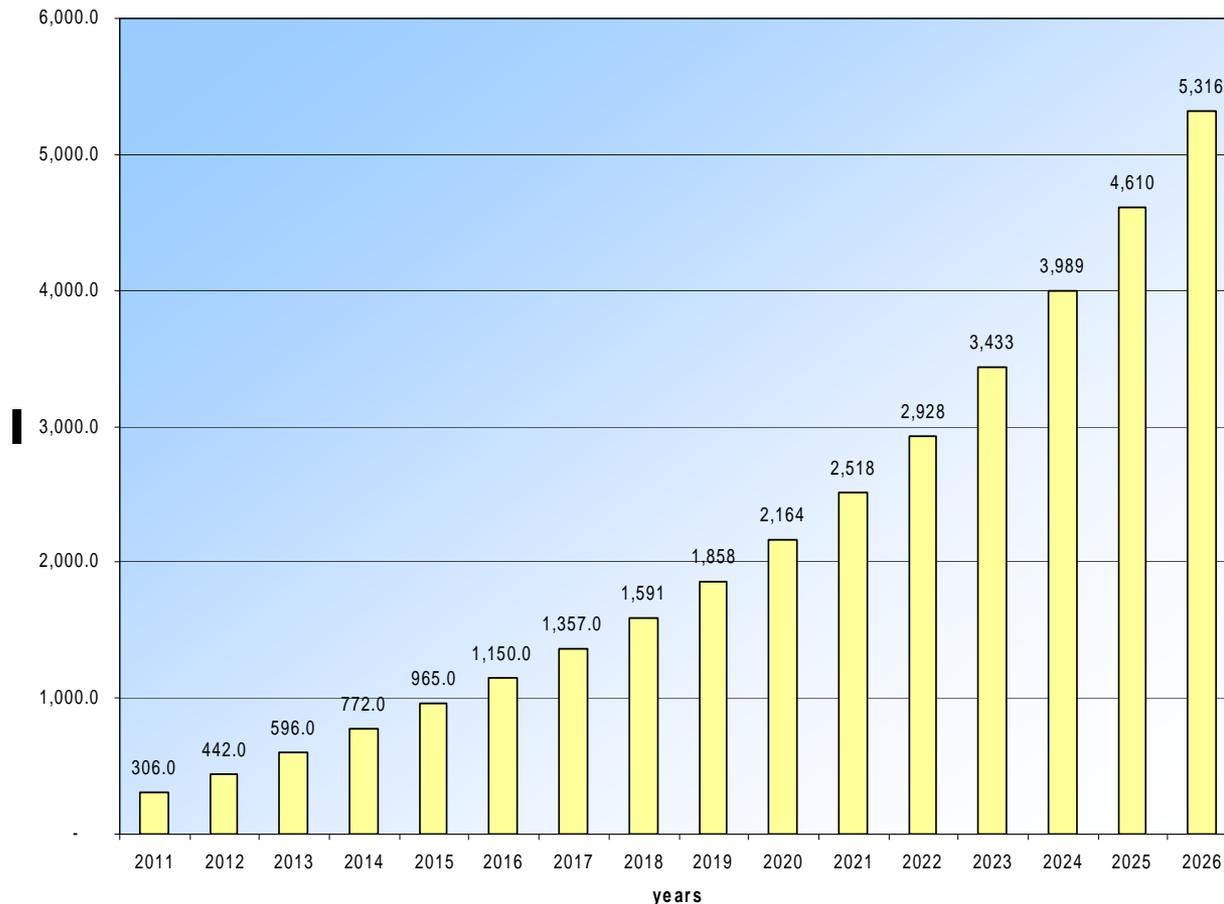


## The Solar Advancement Act of 2010

- Amends the Electric Discount and Energy Competition Act of 1999, Chapter 23
- Converts the RPS obligation from percentage of retail sales to marketwide production basis
- Includes numerous “anti-backsliding” provisions
- Removed the 2 MW cap on Net Metering
- Increased Solar Energy Requirements



## New Jersey's RPS Requirement for Solar (GWhs)



New Jersey Board of Public Utilities, Office of Clean Energy



Comparison between Solar Advancement Act and RPS Solar % as of Jan. 2010				GWh Requirement Converted to % based upon Retail Sales Forecast			Solar RPS Requirement % as of 1/16/10
"Energy Year"	GWh Requirement	Converted to MW	Est. Add't Capacity Required over Current (from %)	NEG Scen. Con-verted to %	CON Scen. Con-verted to %	POS Scen. Con-verted to %	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.01%
n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0170%
n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0393%
n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0817%
n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.1600%
n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.2210%
EY 2011	306 gwh	255 MW	6.68 MW	0.41%	0.38%	0.365%	0.3050%
EY 2012	442 gwh	368 MW	47.55 MW	0.62%	0.54%	0.519%	0.3940%
EY 2013	596 gwh	497 MW	92.03 MW	0.86%	0.73%	0.690%	0.4970%
EY 2014	772 gwh	643 MW	137.74 MW	1.14%	0.95%	0.880%	0.6210%
EY 2015	965 gwh	804 MW	181.33 MW	1.48%	1.19%	1.084%	0.7650%
EY 2016	1,150 gwh	958 MW	202.79 MW	1.82%	1.41%	1.273%	0.9280%
EY 2017	1,357 gwh	1131 MW	220.60 MW	2.23%	1.67%	1.480%	1.1180%
EY 2018	1,591 gwh	1326 MW	240.56 MW	2.71%	1.95%	1.709%	1.3330%
EY 2019	1,858 gwh	1548 MW	268.47 MW	3.28%	2.28%	1.966%	1.5720%
EY 2020	2,164 gwh	1803 MW	308.53 MW	3.97%	2.66%	2.256%	1.8360%
EY 2021	2,518 gwh	2098 MW	372.31 MW	4.82%	3.09%	2.587%	2.1200%
EY 2022	2,928 gwh	2440 MW	n/a MW	n/a	n/a	n/a	
EY 2023	3,433 gwh	2861 MW	n/a MW	n/a	n/a	n/a	
EY 2024	3,989 gwh	3324 MW	n/a MW	n/a	n/a	n/a	
EY 2025	4,610 gwh	3842 MW	n/a MW	n/a	n/a	n/a	
EY 2026	5,316 gwh	4430 MW	n/a MW	n/a	n/a	n/a	
EY 2027+>	5,316 gwh	4430 MW	n/a MW	n/a	n/a	n/a	



## FUTURE OF RENEWABLES IN NEW JERSEY

- Implement the Solar Advancement Act of 2010
  - > “Special Adoption” rule changes to RPS; % to Gwh obligation
  - > Full RPS Rulemaking; anti-backsliding, 3 yr SREC life, 15 yr. SACP Schedule
- Implement Aggregated Net Metering
- Implement the Offshore Wind Economic Development Act
- Transition the NJCEP from OCE Management



New Jersey

More information on  
New Jersey's Clean Energy Program  
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