

New Jersey's Clean Energy Program

General Overview Renewable Energy

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Office of Clean Energy



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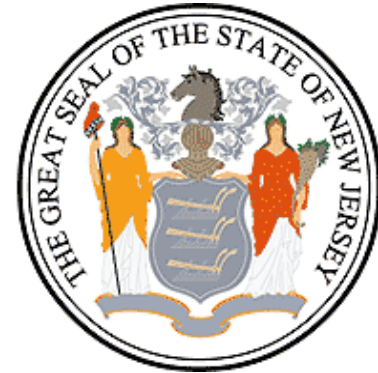




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New Jersey's Clean Energy Program is a statewide program administered by the New Jersey Board of Public Utilities that promotes energy efficiency and renewable energy for all New Jersey ratepayers including residences, businesses, schools and municipalities.



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New Jersey's Integrated Approach Goals and Objectives



- EE (including CHP) and RE will provide energy growth by 2012
- 20% annual increase in electric and natural gas energy efficiency saving
- 785,000 MWh of electricity and 0.6 billion cubic feet of gas will be saved through EE programs by 2012
- 300 MW of Class I RE facilities by 2008



90 MW PV by 2008

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New Jersey's Clean Energy Program 05 – 08 Funding Level

*Non-bypassable fee - all electric
and natural gas customers*



Year	Total	EE	%	RE	%
2005	\$140	\$103	74%	\$37	26%
2006	\$165	\$113	68%	\$52	32%
2007	\$205	\$123	60%	\$82	40%
2008	\$235	\$133	56%	\$102	44%
Total	\$745	\$472	63%	\$273	37%

44% for electric EE 17% for NG EE and 37% for RE

\$18/yr/HH for electric - \$14/yr/HH for natural gas

\$24/HH/Yr for electric EE - \$5/HH/yr for NG EE - \$12/HH/yr for RE

(1% rate impact over 4 years – 0.25% PER YEAR)



NJCE Program 2003 – 2008 Annual Reporting and Goals



Year	EE Electric	EE NG	RE Solar	RE Class I
	MWh	Dtherm	MW	MW
2003 A	285,586	408,583	1.7	76
2004 A	328,912	432,758	2.1	3.7
2005 A	341,770	489,305	5.5	15
2005 G	341,770	489,305	4	19
2006 G	409,454	586,206	14	38
2007 G	486,958	697,167	27	66
2008 G	575,568	824,028	39	89



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Renewable Energy Incentives/Rebates



**Lower the initial capital cost
Improve the payback period to
5-10 years or better – including REC value.**

**60% of capital cost for up to 1 MW
20% grants - 80% loan for RE Power Plants**

**EE and RE combination project
Low interest loans for remaining capital cost**



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New Jersey's Integrated Approach for RE



- **Net Metering/
Standard Interconnections**
- **Capital Cost Incentives/Rebates**
- **Portfolio Standard –
Longer term financing**



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New Jersey's Net Metering and Interconnections Standards



- **Up to 2 MW – 125% of Annual Use**
- **Small Commercial Business**

Up to 10 MW peak

- **< 10 kW Inverter-based - No fee**
- **Reduce barriers**
- **Set timeframes for review**



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Rebates History



Solar Electric Systems 2005 PV Rebate per watt

# of kW	2003 thru 06-24-05	08-05-05 in service by 1/1/06	08-05-06 in service after 12/31/05	03-16-06	09-01-06
1 to 10	\$5.50	\$5.30	\$5.10	\$4.35	\$3.80
10.01 to 40	\$4.00	\$4.35	\$3.90	\$3.20	\$2.75
40.01 to 100	\$4.00	\$3.75	\$3.45	\$3.00	\$2.50
100.01 to 700	\$3.75	\$3.60	\$3.20	\$2.80	\$2.25
500 to 700	0.30				\$2.00



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New Jersey's Clean Energy Program RE general presentation Sept. 24, 2006



NJ's CEP Solar Rebates Installed and Approved Funding



Status	Number	Capacity	Rebate
Installed with OCE rebate	1,267	15.4 MW	\$70.7 M
Approved for Rebate	545	34 MW	\$113 M
Applications in Queue	1,047	35.8 MW	\$131 M



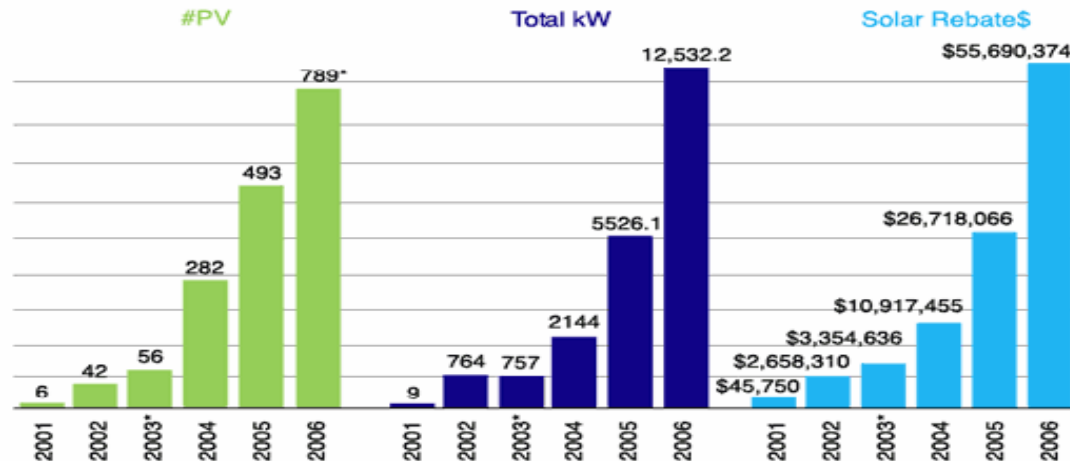
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New Jersey Solar Installations & Capacity

New Jersey Solar Installation Projects (CORE) to Date (2001 through August 2006)



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Renewable Energy Portfolio Standard



- *NJ electric supplier must provide a percentage of their electricity as Class I renewable*
- *0.75 % (3.25%) by EY 2005 - 4 MW of PV (\$1.40)*
- *4.0 % (6.5%) by EY 2009- 90 MW of PV (\$4.50)*
- *20% (22.5%) by EY 2021 – 1500 MW of PV (\$18.00)*
- *Compliance with NJ's RPS through*
- *Renewable Energy Certificates (RECs)*
- *1 MWh of renewable energy = 1 REC*
- *LFG REC \$5, Wind REC \$15, Solar REC \$170*

NJ's RE goals will be achieved through the RPS and financed by RECs



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New Jersey's RPS Value of RECs



Year	Class 1 – Class 2 and Solar RECs	Solar RECS
2005	\$ 14,009,400	\$ 1,448,000
2009	\$ 48,746,600	\$ 15,080,000
2021	\$ 222,275,800	\$ 126,000,000

GHG Credits	-> \$25	-> \$250
REC	\$15 -> \$5 (\$2.5)	\$200 -> \$70



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New Jersey SRECs



Current SREC Trading Statistics, Through June 2006

Reporting Year 2006 (for production between June 1, 2005 – May 31, 2006)

Month Year	# SRECs Traded in Month	Monthly High (\$/MWh)	Monthly Low (\$/MWh)	Cumulative # SRECs Traded	Cumulative Weighted Average Price (\$/MWh)
June 2006	3909	\$260	\$165	9280	\$203.68
May 2006	1314	\$260	\$100	5371	\$204.48
April 2006	448	\$297	\$150	4057	\$203.34
Mar- 2006	1037	\$265	\$115	3605	\$201.98
Feb- 2006	486	\$265	\$115	2568	\$192.06
Jan- 2006	755	\$250	\$150	2082	\$192.50
Dec 2005	796	\$230	\$150	1327	\$190.16
Nov 2005	71	\$200	\$174	531	\$179.49
Oct 2005	250	\$211	\$160	460	\$178.85
Sep 2005	106	\$240	\$150	210	\$176.52
Aug 2005	96	\$230	\$150	104	\$170.95
July 2005	8	*	*	*	*

*Monthly SREC pricing data based on prices reported by registered SREC account holders through the New Jersey SREC website.



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New Jersey RECs Reporting in PJM GATS



- *PJM – Environmental Information Systems (EIS) launched its Generator Attributes Tracking System (GATS) in Oct 2005 for the Mid-Atlantic States*
- *NJ, MD, PA, DE and DC all use GATS for their RPS Compliance Reporting*
- *Feb 2006 GATS reported 14,282,070 REC generated during the first 2005 trading period*
- *This represents 2.02% of PJM total system mix*
- *82 account holders*
- *734 generators*
- *More info available at www.pjm-eis.com*



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New Jersey RECs Reporting in PJM GATS



- *GATS Handout on generators, account holders and certificates*



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New Jersey's Transition to an Open Market RECs based System



- New Jersey's 20 % by 2020 Renewable Energy Portfolio Standards (RPS) will require at minimum approximately 4,400 MW of renewable energy capacity and 1500 MW of Solar capacity.
- NJ cannot simply “buy” our way to the RPS goals by providing rebates or grants to construct this capacity.
- We must consider other models



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New Jersey Residential 10 kw Solar Electric System

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

NJCEP Rebate:
\$38,000

Federal Tax
Credit: \$2,000

Out of Pocket
Expense: \$37,500

Electric cost savings /
Net Metering: \$1,500/ yr

Total savings :
\$1,500



assuming a 12,000 kWh annual energy usage

Payback Period: 25 yrs



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New Jersey Residential 10 kw Solar Electric System

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

NJCEP Rebate:
\$38,000

Federal Tax
Credit: \$2,000

Out of Pocket
Expense :\$37,500



assuming a 12,000 kWh annual energy usage

Electric cost savings /
Net Metering: \$1,500/ yr

SRECs Income:
\$2,400 / yr
2005 \$0.14/hh/yr
2009 \$1.40/hh/yr
2020 \$23/hh/yr

Total savings :
\$3,900



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Payback Period: 9.6 yrs

New Jersey's Clean Energy Program



New Jersey Residential 10 kw Solar Electric System

Installed Cost: \$77,500



NJCEP Rebate:
\$0.00

Federal Tax
Credit: \$2,000

Out of Pocket
Expense : \$75,500

Electric cost savings /
Net Metering: \$1,500/ yr

Total savings :
\$1,500



assuming a 12,000 kWh annual energy usage

Payback Period: 50.3 yrs



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New Jersey Residential 10 kw Solar Electric System

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



NJCEP Rebate:
\$0.00

Federal Tax
Credit: \$2,000

Out of Pocket
Expense : \$75,500



assuming a 12,000 kWh annual energy usage

Electric cost savings /
Net Metering: \$1,500/ yr

SRECs Income:
\$6,050 / yr

\$502/ SREC

Total savings :
\$7,550



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Payback Period: 10 yrs

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New Jersey's *EEPS* Value of *EECs*



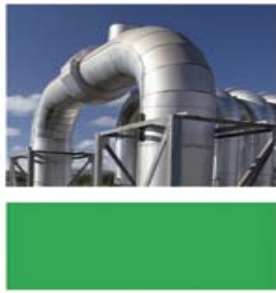
Year	Class 1 Res EE	Class II C&I EE	Class III Clean DG	Class IV Load Mgmt
2006	\$ 5,124,000	\$ 5,124,000	\$ 5,124,000	\$ 5,124,000
2012	\$ 38,024,000	\$ 38,024,000	\$ 38,024,000	\$ 38,024,000
2021	\$ 84,900,000	\$ 84,900,000	\$ 84,900,000	\$ 84,900,000

EEEC	2006 -> 2021	\$70 -> \$20
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- New Jersey's Clean Energy Program provides incentives for investments in energy efficiency and renewable energy
 - \$492 million in energy efficiency investments
- These investments help to:
 - reduce customers energy bills
 - reduce pollution levels
 - reduce reliance on imported fuels
 - stimulate the local economy and keep energy dollars in the State



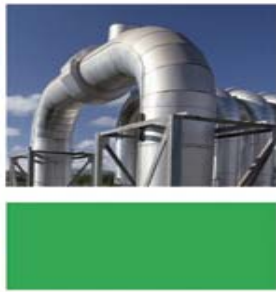


- The programs reduced electrical usage by 1,216,403 MWh over 5 years
 - 243,280 MWh of energy savings per year
- These savings are equivalent to the electric usage of approximately 135,000 average homes



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- These savings continue over the life of the measures which averages 15 years
- Savings over the life of the measures:
 - 14,888,209 MWH of energy savings



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- These programs also reduced natural gas usage by 2,048,981 Dtherms per year
- These savings are equivalent to the annual usage of over 20,000 average homes heated with natural gas
- Savings over the life of the measures:
 - 38,943,822 Dtherms





- The programs have also reduced electric demand by 450 MW
- This has eliminated the need to site, build and operate a mid-sized power plant
- Reducing demand also improves the reliability of the electric transmission and distribution system



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- Energy efficiency and renewable energy generation also reduce emissions resulting in cleaner air and other environmental and health benefits
- Annual Emission Reductions:
 - CO₂: 317,467 metric tons
 - NO_X: 550 metric tons
 - SO₂: 1,217 metric tons
 - HG (mercury): 15 lbs

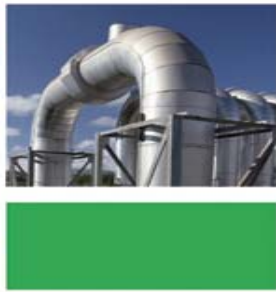




- Cumulative emission reductions over the life of the measures over the five years of the program:
 - CO₂: 13,190,265 metric tons
 - NO_x: 21,798 metric tons
 - SO₂: 46,283 metric tons
 - HG: 558 pounds



BOTTOM LINE



You can either incorporate more energy efficiency (including increased building energy codes and appliance standards) including combined heat and power and clean distributive and renewable energy into the over energy mix or pay for larger and larger transmission lines into NJ that will move your payments to out of state facilities and out of state jobs with the associated transport of out of state emissions contributing to the reasons NJ does not meet its clean air states putting more pressure on existing NJ business to reduce emissions



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New Jersey's Integrated Approach



- New Jersey's Clean Energy Program:
- www.njcleanenergy.com
- Rutgers' Center for Energy, Economics and Environmental Policy (CEEPP)
- <http://policy.rutgers.edu/ceepp>
- Clean Energy Council – Committees
- **Portfolio Management Work Group**
- State Energy Master Plan and Energy data management



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Thank you
Questions ??

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