

# New Jersey's Clean Energy Program



## General Overview Energy Efficiency

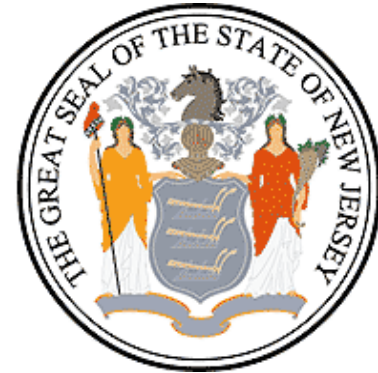
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Office of Clean Energy



New Jersey Board of Public Utilities



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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.***

# *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

# *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

# *NJ's Clean Energy Program Results – EE & RE*



*NJ residents and business use 74,000,000  
MWh per year of electricity increasing at 1.4 % per year*

*NJ residents and business use 74,000,000  
therms per year of natural gas increasing at 1.4 % per year*

*NJ is 7,500 square miles with 127 miles of coastline  
With a population of  
3,200,000 residential electric customers  
500,000 C&I customers*



## *Energy Efficiency Programs - Residential*



### **Home Energy Analysis**

**Warm Advantage** 129,021 - 12,328,739 Dtherms

**Cool Advantage** - 1,095,661 MWh

**NJ Energy Star Homes** 20,800 – 376,554 MWh  
- 12,883,376 Dt

**NJ Energy Star Products** 4,889,210 – 1,715,225 MWh

**Comfort Partners** 31,555 – 550,945 MWh  
- 6,729,837 Dt

# *Energy Efficiency Programs - Residential*



**Home Energy Analysis** is a free online audit to help residential customers understand and reduce their home energy use links the audit to our residential rebates

**Home Performance with Energy Star** – In home audit - Contractors certified by the Building Performance Institute work with homeowners to identify sources of energy losses and recommend energy saving improvements linked to utility financing and residential rebates – performed additional incentives for affordable housing up to 300% of the federal poverty level



## *Energy Efficiency Programs - Residential*



### **Warm Advantage and Cool Advantage Programs**

**Provides rebates and promotes energy efficient heating and cooling systems in homes 27,510 participants saved 15,000,000 kWh, 13 MW and 1,400,000 therms.**

**Energy Star Homes** Provides incentives for energy efficient new construction that target NJ area designated for growth (Smart Growth) 8,000 participants 20% market share for new homes construction saved 6,100,000 kWh, 19 MW, and 2,395680 therms. An Energy Star home certification is acceptable as the local energy code construction review

## *Energy Efficiency Programs - Residential*



**Energy Star Products** Public education and incentives for home energy efficient appliances and lighting over 1.2 million rebates provided for room air conditions and compact fluorescents saving 63,500,000 kWh and 5 MW

**Comfort Partners** Provides 100% installation of energy saving measures to low income customers at no cost to improve their energy affordability linked with our other energy assistance programs. Over 6,000 customers saving each homeowner on average 880 kWhs and 76 therms for an annual savings over \$200.

## *Energy Efficiency Programs – C&I*



**Smart Start Buildings Program** Provides technical assistance and incentives for new and retrofit efficiency upgrades for commercial office buildings, industrial facilities, schools, hospitals and government building owners. Provided rebates to 2,400 businesses and government building owners that saved 288,439,000 kWh, 36.5 MW, and 1,900,000 therms saving these building owners over \$60,000,000 annually.

**Over the last 5 years 21,394 participants have saved 10,858,892,000 kWh and 68,853,920 therms**

## *Energy Efficiency Programs – C&I*



**Combined Heat and Power** Provides incentives up to 30% to purchase and install various types of combined heat and power systems up to 1 MW that have at minimum 68% efficiency and meet all NJDEP State of the Art air quality control limits – provided 10 rebates with commitments of \$7.4 million.

## *Energy Efficiency Programs – C&I*



Larger Projects 50,000 sq ft - starting in planning stage are eligible for up to \$12,000 in incentives :

Three step process to plan in overall energy efficiency into and project in a coordinated approach:

Pre-Design Planning Session up to \$2,000

Design Simulation and Screening up to \$5,000

Detailed Analysis of Energy-Efficient Measures up to \$5,000

*And...Equipment Incentives*

Additional Multiple Measures Bonus  
(Two or More Approved Measures)

# *Energy Efficiency Programs – C&I*



Smaller Projects, or Those Begun After the Design Stage, May Take Advantage of:

- Project Review and Screening
- Recommendations for Energy-Efficiency Measures
- Equipment Incentives
- Additional Multiple Measures Bonus  
(Two or More Approved Measures)



# *Energy Efficiency Programs – C&I*



- Categories:

- Electric Chillers
- Natural Gas Cooling
- Desiccant Units
- Electric Unitary HVAC Systems
- Natural Gas Heating Systems
- Natural Gas Water Heating
- Premium-Efficiency Motors
- Prescriptive Lighting
- Lighting Controls
- LED Traffic Signals
- Variable Frequency Drives
- Ground Source Heat Pumps

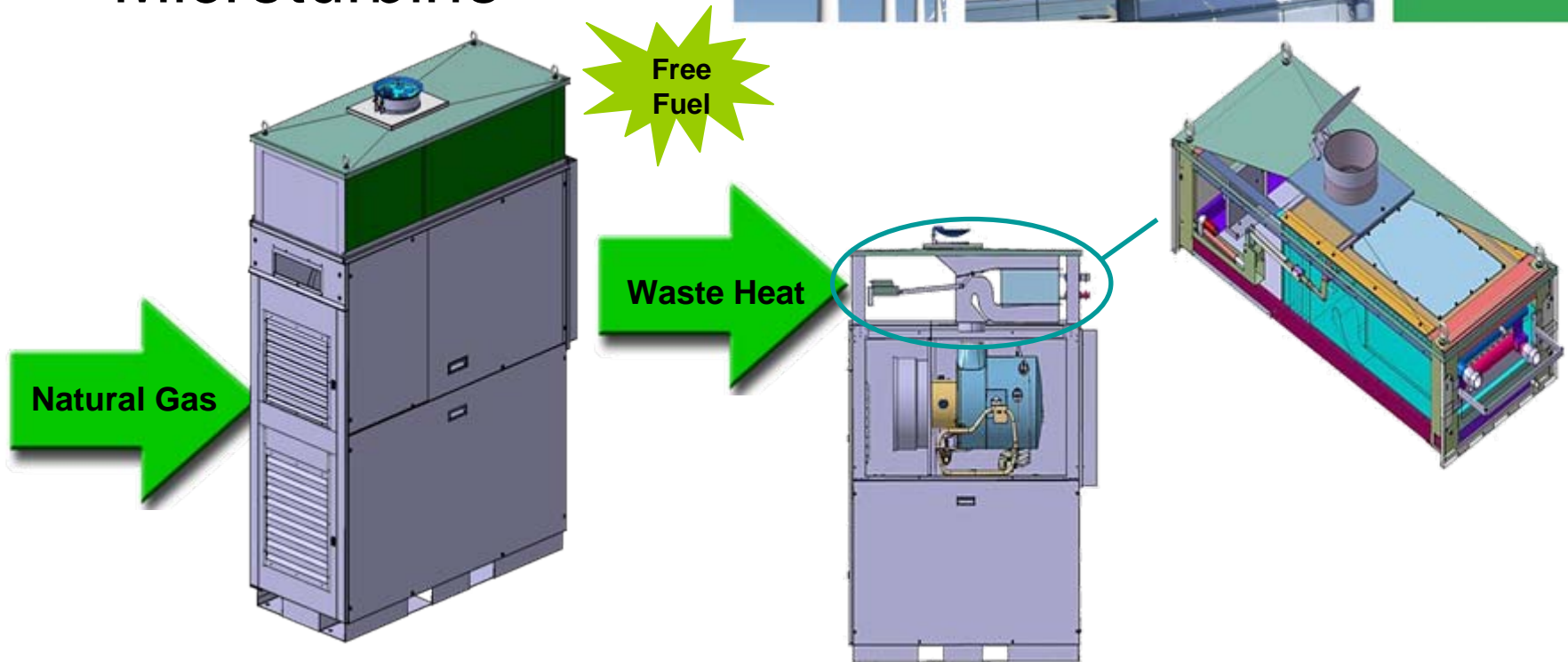
# *New Jersey SmartStart Buildings® — The Program*



Customers May Request Technical Assistance and Receive an Incentive for Qualified Energy-Efficient Equipment Not on the Prescriptive Technologies List.

- Customer project in New Jersey
- Custom Measure application
- Screening process
- Incentive Up to 80% of measure or 1.5 year payback

# Power & Hot Water from Microturbine



***MicroTurbine***  
***~26%***

**+**

***Integrated  
Heat  
Exchanger***  
***~45%***

**=**

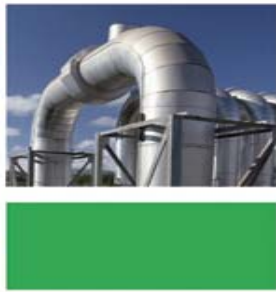
***Total Energy  
Utilization***  
***70%+***



- 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



- 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





- 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



- Energy efficiency and renewable energy generation also reduce emissions resulting in cleaner air and other environmental and health benefits
- Annual Emission Reductions:
  - CO<sub>2</sub>: 317,467 metric tons
  - NO<sub>X</sub>: 550 metric tons
  - SO<sub>2</sub>: 1,217 metric tons
  - HG (mercury): 15 lbs



- Cumulative emission reductions over the life of the measures over the five years of the program:
  - CO<sub>2</sub>: 13,190,265 metric tons
  - NO<sub>x</sub>: 21,798 metric tons
  - SO<sub>2</sub>: 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

# *New Jersey's Integrated Approach*



- New Jersey's Clean Energy Program:
- [www.njcleanenergy.com](http://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





Thank you  
Questions ??

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SAVE**

**Energy, Money and the  
Environment**

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