New Jersey Board of Public Utilities

Clean Energy Incentive Program

New Jersey School Boards Association

Gary E Finger
Business Ombudsman
October 25th, 2016

Program Goals

- **Save** energy and lower operating costs
- **Protect** environment and lower emissions
- **Change** the business mindset:
  - Think high efficiency first
  - Encourage early retirement of equipment
  - Increase effective operations and maintenance
  - Promote renewable energy alternatives

Commercial & Industrial Portfolio

- Benchmarking
- Local Government Energy Audit
- NJ SmartStart Buildings
- Direct Install
- Pay for Performance
- Combined Heat & Power/Fuel Cells

Free Benchmarking Report

Benchmarking assessments are designed to help:

- Understand energy cost trends and consumption at each building
- With sufficient comparative data, see how building(s) compare to similar buildings using EPA Portfolio Manager
- Identify relevant incentives for energy efficiency projects
- The benchmarking report is valued at $1,500

Local Government Energy Audit

The Audit is available for:

- NJ Local Governments
- 501(c)(3) Non-profit Agencies
- NJ State Colleges and Universities
- K-12 Schools

Covering a wide range of building types, including:

- Offices
- Town Halls
- Police and Fire Stations
- Courtrooms
- Community Centers
- School Buildings

NJ SmartStart Buildings

Prescriptive Incentives – Prequalified Technologies

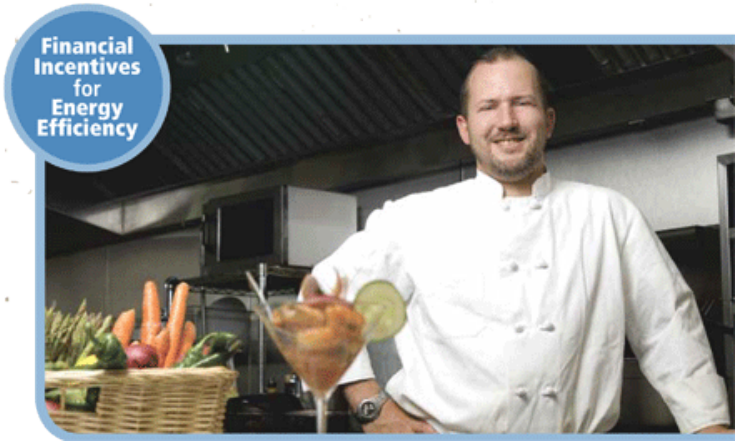
- Electric Chillers
- Natural Gas Cooling
- Electric Unitary HVAC Systems & Controls
- Ground Source Heat Pumps
- Gas Heating
- Water Heating
- Lighting Controls
- Variable Frequency Drives VAV Systems or ChW Pumps
- NEMA Premium Motors*
- Prescriptive & Performance Lighting*
- Refrigeration Doors/Covers and Controls
- Food Service Equipment

Benedict A. Cucinella Elementary

- Electric Unitary HVAC Retrofit
- Premium Motors Installation
- NJ SmartStart Buildings Incentives:
  - HVAC $12,122
  - Motors $648
- Annual Savings from HVAC Upgrade
  - 27,789 kWh
- 266,240 kWh (20.9% improvement)
  - **$38,605 / year**

Food Services Grouping

A new line of Prescriptive Buildings incentives has been added for high efficiency food service equipment, including:



- Dishwashers
- Fryers
- Griddles
- Hot Food Holding Cabinets
- Ice Machines
- Ovens
- Refrigerators & Freezers
- Steam Cookers

The 50% enhancement for areas impacted by Sandy does not apply to the new food service equipment incentives.

Direct Install

- A **turn-key, retrofit program Provides incentives of 70% of the installed cost**
  - Lighting and Occupancy sensors
  - HVAC
  - Pipe Insulation,
  - Motors and Variable Speed Drives
  - Refrigeration Measures
  - Low Flow Water Devices

- Incentives are paid directly to the contractor
  - customer pays remaining 30%
  - $125,000 project cap
  - $250,000 per entity cap

Direct Install Contractors

- Pre-qualified contractors assigned by territory
- Assist with applications/agreements
- Guide participants through program steps
- Perform free energy assessments
- Install cost-effective measures
- Process all necessary paperwork

WHY Direct Install??

Addresses customer energy efficiency "hurdles"

Smaller customers sometimes

- ***Don't have the money***
- ***Don't know where to start***
- ***Don't know who to trust***
- ***and just don't have the time***

Gas and Electric Utility Bills

Key DI Program Features

- Each project starts with a detailed no-cost measure assessment by the participating contractor (Utility Bills)
- A select group of pre-qualified contractors deliver all program services at ***negotiated flat fees*** for measures
- All permitting and disposal included
- Clean Energy staff oversee each project

Program Overview

- Energy Assessments identify eligible measures
  - Lighting and Occupancy sensors
  - HVAC
  - Pipe Insulation,
  - Motors and Variable Speed Drives
  - Refrigeration Measures
  - Low Flow Water Devices

- No cost for Energy Assessment
- *Improvements must pass a **Total Resource Cost Test** whereby the "low hanging fruit" justifies HVAC replacements.*
- One year labor/materials warranty (plus equipment warranties)
- Customer is responsible for costs to correct code or safety violations
- Reviews & inspections - Program Manager (TRC)

South Jersey Federal Credit Union

- 30,000 sq.ft. Building
  - Incandescents to Screw-in CFLs
  - Fluorescents to T-8s & LED Exit Signs
  - Occupancy Sensors
- HVAC Retrofit & Controls
  - Replaced Six 18 Year Old HVAC Units
- **Total Project Cost $108,573**
- Direct Install Incentive $86,858
- Customer Share of Cost $21,714

- **Annual Savings $7,574**

- ***Payback Period – 2.9 Years***

Woodbine Elementary

- Direct Install Participant
- Total Project Cost $112,634
- Direct Install Incentive $80,000
- Customer Share of Cost $32,634
- Annual Savings
  - 48,945 kWh and 14 kW peak demand reduction
  - 3,268 MMBtu oil replaced by 19,263 therms natural gas
  - **$56,234 / year**
- Payback Period – **7 Months**
- Green Schools Savings
  - 130,800 kWh (24.6% improvement)
  - $23,751

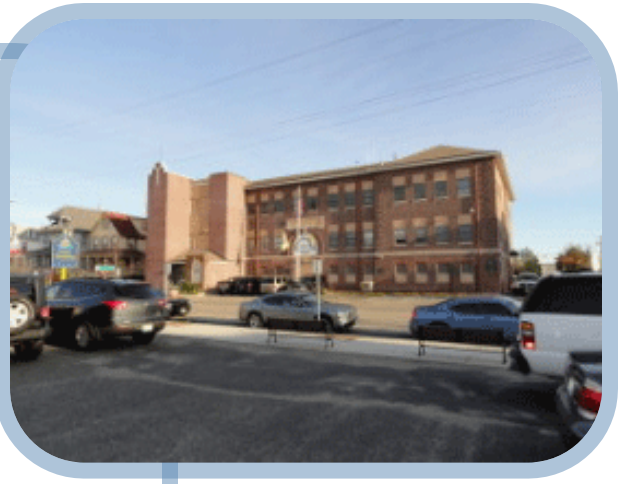
Black River Middle

- Direct Install Participant
- Total Project Cost $31,573
- Direct Install Incentive $18,944
- Customer Share of Cost $12,629
- Annual Savings
  - 33,186 kWh
  - 2,015 therms
  - **$4,266 / year**
- Payback Period – **3 Months**
- Green Schools Savings
  - 22,720 kWh (2.2% improvement)
  - 6,341 therms (14.8% improvement)
  - $9,353

Woodbridge Library

- 52,000 sq.ft. Building
- Lighting Retrofit & Controls
  - Incandescents to screw-in CFLs
  - Fluorescents to T-8s & LED Exit Signs
  - Occupancy Sensors
- Total Project Cost $100,148
- Direct Install Incentive $50,000 (Capped)
- Customer Share of Cost $50,148
- **Annual Savings**
  - 260,260 kWh
  - **$39,149**
- Payback Period – **1.28 Years**

Ocean City Police



- Three Story Police Department Building
- Lighting & HVAC Retrofit & Controls
  - 4 lamp to 2 lamp T-8s, Occ Sensors
  - Ten 15-26 Year Old ACs
  - Four 30 Year Old Gas Furnaces
  - Faucet Aerators for Gas Water Heating
- Total Project Cost $106,550
- Direct Install Incentive $50,000 (Capped)
- Customer Share of Cost $56,550
- **Annual Savings**
  - 43,603 kWh, 3,198 Therms
  - **$11,595**
- Payback Period – 4.88 Years

Pay for Performance

- Comprehensive, **whole-building approach** to saving energy in existing or new facilities
- Goal is to **reduce facility energy consumption by 15%** or more, or 4% for eligible high-energy intensity customers
- Relies on a network of program partners who provide technical services under direct contract to customer

Pay for Performance Incentives

- Incentives up to **$2 million per project**, assuming both gas and electric improvements are made; $4 million annual entity cap
- Incentives paid out in three installments at program milestones:
  1. Completion of comprehensive energy study ("Energy Reduction Plan")
  2. Installation completion of recommended measures
  3. End of 12-month energy savings verification period

Wyckoff Public Schools

- Eisenhower Middle School, Lincoln, Coolidge, Washington Elementary Schools
- Energy Efficiency Measures:
  - T-12s to T-8s
  - Lighting Occupancy Sensors
  - Stream Trap Replacements
  - Building Automation Systems
- Project Cost $1,189,879
- Incentives $201,448 (integrated with ESIP)
- **Annual Savings**
  - 474,274 kWh, 34,840 Therms,
  - **$138,417 / year**
- Payback Period – **7 Years**

NJ CHP Policy – for Critical Facilities

CHP more than just an emergency measure - operates 24/7

Can generate a portion/all of the facilities energy needs including electric and thermal

What is needed for CHP for Critical Facilities

- Operate isolated from the grid – Islanding
- Undergrounding of wires
- Blackstart - (Code issues)
- Testing
- Training

The Markets for CHP

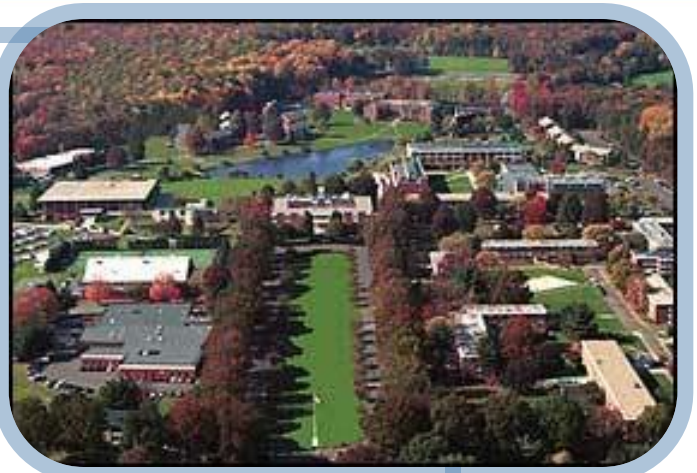
Strong Candidates

- Healthcare (hospitals and long term care facilities)
- Industrial and Manufacturing
- Hotels/Lodging
- Data Centers
- College and Universities (campus settings)
- Multi-Family Housing

Potential Candidates

- Commercial Office Buildings
- K-12 Education Facilities
- Government and municipal facilities
- Retail Establishments
- Health Clubs

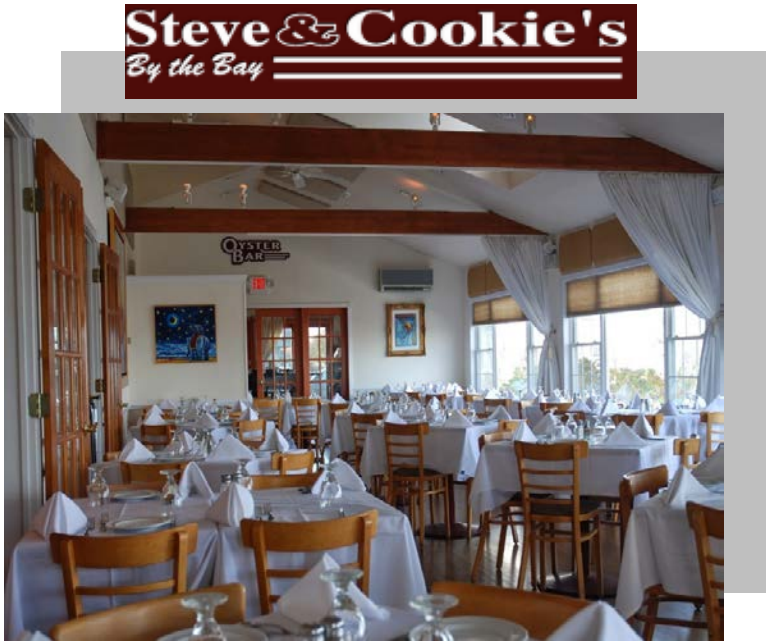
Rider University



- 280 acre college campus
- Combined Heat and Power (CHP)
  - 1,100 kW internal combustion engine with recovery
  - 80-ton absorption chiller
- Project Cost $4,594,188 (estimated)
- **Incentives $1,000,000**
- Annual Savings 8,545,053 kWh generation, 21,029 MMBtu recovered waste heat to provide 47% of campus electric load, 76% heating and hot water load, and 23% cooling load
- **Annual Cost Savings $527,973**
- **Payback Period 6.8 Years**
- Manufacturing and construction anticipated to generate 25 temporary full-time jobs

Steve & Cookies By the Bay

- Restaurant in Margate
- 20 kW Micro CHP
- Project Cost: $189,600
- **Incentives: $40,000**
- **Annual Cost Savings: $20,588**
- **Payback Period: 6.3 Years**



For More Information

Visit: NJCleanEnergy.com

Call (866) NJSMART

For the latest updates on program announcements or new incentives, subscribe to the NJ Clean Energy E-Newsletter at NJCleanEnergy.com

gary.finger@bpu.state.nj.us