Municipal Leadership Strategies for Community Energy Efficiency

Honorable Nora Radest, Mayor – Summit, NJ
Tony O'Donnell, Economist – Sustainable Jersey
Mike Thulen, ESIP Coordinator – NJ BPU
Beth Lovejoy, Summit Environmental Commission Chairperson
Scott Fischer, Managing Member Ciel Power
Christine Symington, Energy Director – Sustainable Princeton

Honorable Nora Radest

Mayor – Summit, NJ

Tony O'Donnell

Economist – Sustainable Jersey

Sustainable Jersey Supporters

Underwriters

The Geraldine R. Dodge Foundation — Imagine a better New Jersey

New Jersey's cleanenergy program — njcleanenergy.com

Surdna Andrus

Grants Program Underwriters

PSEG — We make things work for you.

Gardinier Environmental Fund

Platinum Sponsors

South Jersey Gas

PSEG — We make things work for you.

New Jersey Natural Gas

Gold Sponsor

NJM Insurance Group

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Bayshore — Your recycling solution.

Bronze Sponsors

Covanta — Powering Today. Protecting Tomorrow.

Greener by Design

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AT&T

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Sustainable Jersey Certified — A Better Tomorrow, One Community at a Time

@SJ_Program | #sustainablejersey | #njleague

Sustainable Jersey for Schools Supporters

Underwriters

Grants Program Underwriters

Founding Sponsors

Bronze Sponsor

Municipal Program Energy Actions 2014

	Climate Planning and Energy Efficiency	Renewable Energy	Alternative Vehicles
Energy Impact Of Municipal Operations	• Municipal Carbon Footprint • Energy Tracking & Management • Audit One Building • Inventory & Upgrade All Buildings • High Performance Buildings	• On-Site Solar Energy • On-Site Geothermal • On-Site Wind Energy	• Fleet Actions • Procurement Actions
Municipal Impact On Community Energy Use	• Community Carbon Footprint • Climate Action Plan • HPwES Program • HPwES Outreach • Direct Install Program • Direct Install Outreach	• Wind Ordinance	

SUSTAINABLE JERSEY CERTIFIED
A Better Tomorrow, One Community at a Time

Municipal Program Energy Actions 2017

	Climate Planning and Energy Efficiency	Renewable Energy	Alternative Vehicles
Energy Impact Of Municipal Operations	• Municipal Carbon Footprint • Energy Tracking & Management • Energy Efficiency for Municipal Facilities	• On-Site Solar Energy • On-Site Geothermal • On-Site Wind Energy • Purchase Renewable Energy	• Fleet Actions • Procurement Actions
Municipal Impact On Community Energy Use	• Community Carbon Footprint • Climate Action Plan • Residential Energy Efficiency Outreach • Commercial Energy Efficiency Outreach	• Wind Ordinance • Renewable GEA • Make Your Town Solar Friendly • Community-Led Solar Initiatives	• Make Your Town EV Friendly • Public EV Chargers

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NEED FUNDING? $200K AVAILABLE TO MUNICIPALITIES FOR SUSTAINABILITY INITIATIVES

Applications due February 28, 2018

HEADLINES

2017 NJ Municipal Sustainability Awards Announced
NOV 14, 2017

70 NJ Municipalities Achieve Sustainability Certification
OCT 31, 2017

UPCOMING EVENTS

Middlesex Hub Green Drinks
Pino's Gift Basket Shoppe and Wine Cellar

ABOUT SUSTAINABLE JERSEY

Sustainable Jersey is

PARTICIPATING COMMUNITIES

View the map of Sustainable

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View the map of Sustainable

Back to Top | Expand All | Collapse All

- Animals in the Community
- Arts & Creative Culture
- Brownfields
- Community Partnership & Outreach
- Diversity & Equity
- Emergency Management and Resiliency
- Energy Efficiency
- Food
- Green Design
- Health & Wellness
- Innovation & Demonstration Projects

PLANNED ACTION TOTALS

Mandatory	0/1
Priority	0/12
Total	0/1535
Categories	0/18
Actions	0/151

Mark actions as planned to determine whether or not your application would meet certification criteria.

Back to Top | Expand All | Collapse All

Commercial Energy Efficiency Outreach *NEW*

10 Points

- This action has variable points: 10, 20
- This action counts towards a Gold Star

Home Performance with ENERGY STAR

Municipal Program

20 Points

- Non-competitive funding available

Outreach

10 Points

- Non-competitive funding available

Residential Energy Efficiency Outreach *NEW*

10 Points

- This action has variable points: 10, 20
- This action counts towards a Gold Star

Food

Green Design

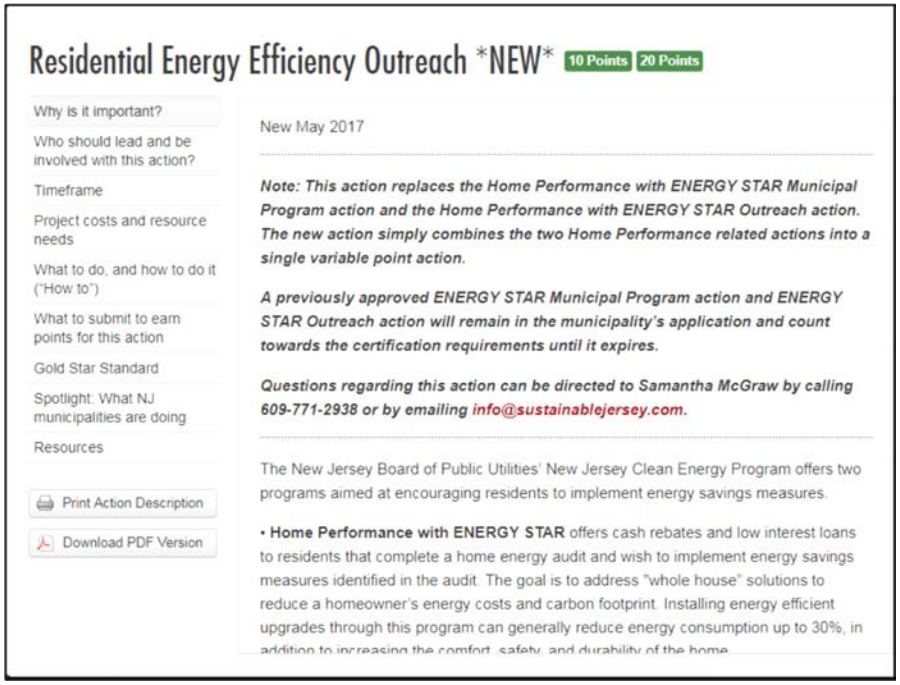
PLANNED ACTION TOTALS

Mandatory	0/1
Priority	0/12
Total	0/1535
Categories	0/18
Actions	0/151

Mark actions as planned to determine whether or not your application would meet certification criteria.

Sustainable Jersey Action Outlines

- Actions are organized to be user friendly
- Provide specific guidance on what needs to be accomplished
- Lists resources and spotlights to help guide Green team



Residential Energy Efficiency Outreach *NEW* 10 Points 20 Points

Why is it important?
Who should lead and be involved with this action?
Timeframe
Project costs and resource needs
What to do, and how to do it ("How to")
What to submit to earn points for this action
Gold Star Standard
Spotlight: What NJ municipalities are doing
Resources

Print Action Description
Download PDF Version

New May 2017

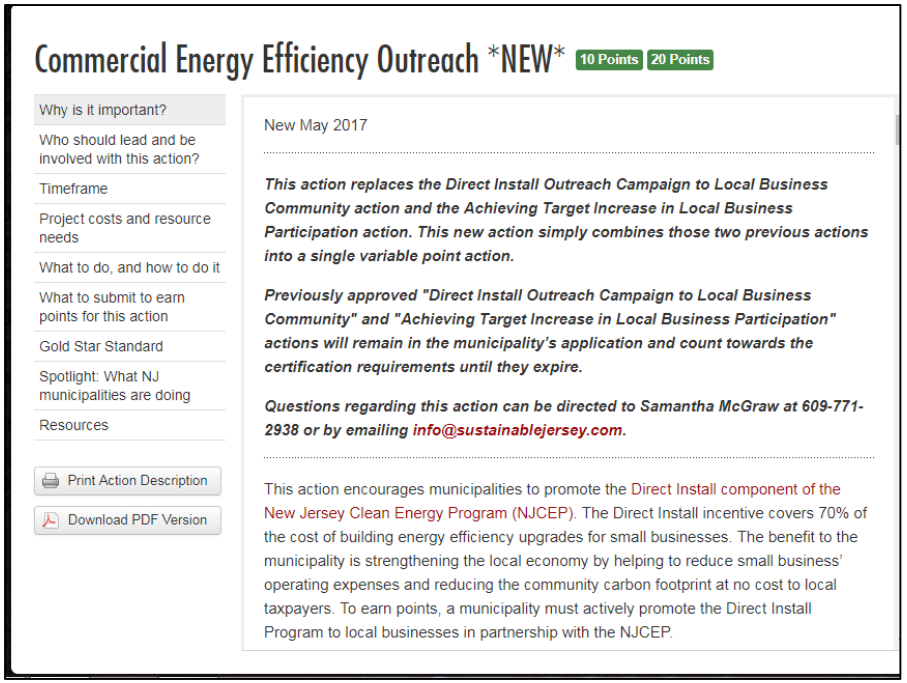
Note: This action replaces the Home Performance with ENERGY STAR Municipal Program action and the Home Performance with ENERGY STAR Outreach action. The new action simply combines the two Home Performance related actions into a single variable point action.

A previously approved ENERGY STAR Municipal Program action and ENERGY STAR Outreach action will remain in the municipality's application and count towards the certification requirements until it expires.

Questions regarding this action can be directed to Samantha McGraw by calling 609-771-2938 or by emailing info@sustainablejersey.com.

The New Jersey Board of Public Utilities' New Jersey Clean Energy Program offers two programs aimed at encouraging residents to implement energy savings measures.

• **Home Performance with ENERGY STAR** offers cash rebates and low interest loans to residents that complete a home energy audit and wish to implement energy savings measures identified in the audit. The goal is to address "whole house" solutions to reduce a homeowner's energy costs and carbon footprint. Installing energy efficient upgrades through this program can generally reduce energy consumption up to 30%, in addition to increasing the comfort, safety, and durability of the home.



Commercial Energy Efficiency Outreach *NEW* 10 Points 20 Points

Why is it important?
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Project costs and resource needs
What to do, and how to do it
What to submit to earn points for this action
Gold Star Standard
Spotlight: What NJ municipalities are doing
Resources

Print Action Description
Download PDF Version

New May 2017

This action replaces the Direct Install Outreach Campaign to Local Business Community action and the Achieving Target Increase in Local Business Participation action. This new action simply combines those two previous actions into a single variable point action.

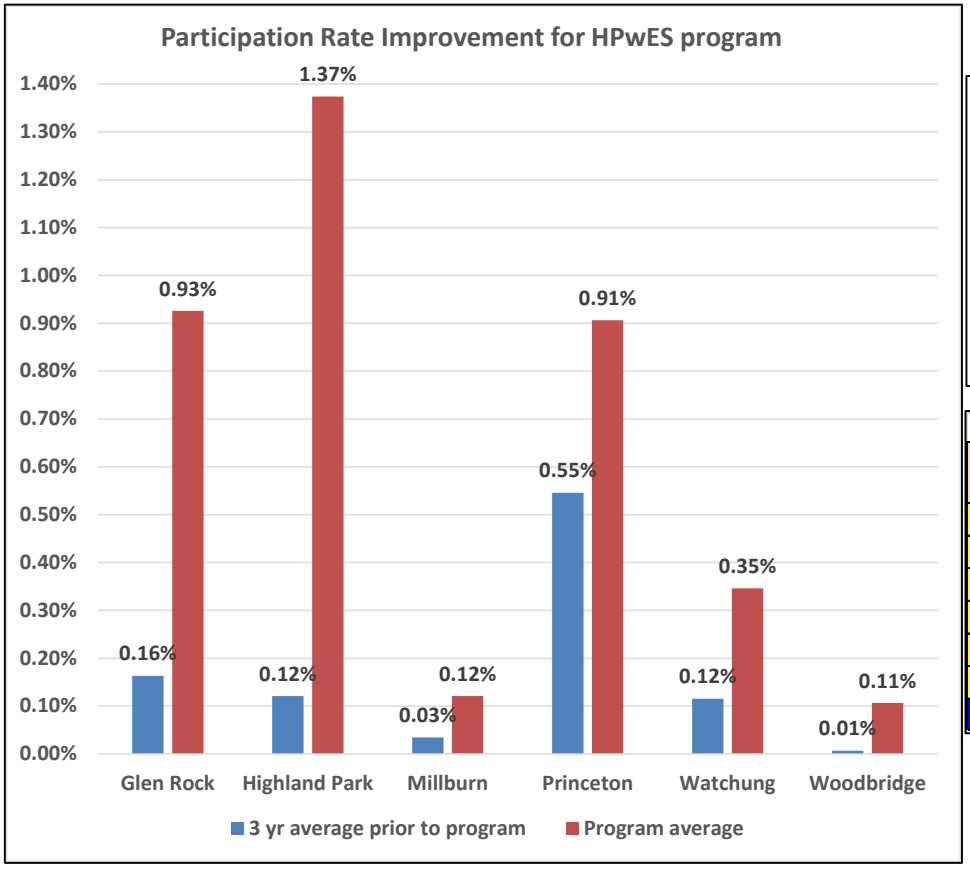
Previously approved "Direct Install Outreach Campaign to Local Business Community" and "Achieving Target Increase in Local Business Participation" actions will remain in the municipality's application and count towards the certification requirements until they expire.

Questions regarding this action can be directed to Samantha McGraw at 609-771-2938 or by emailing info@sustainablejersey.com.

This action encourages municipalities to promote the Direct Install component of the New Jersey Clean Energy Program (NJCEP). The Direct Install incentive covers 70% of the cost of building energy efficiency upgrades for small businesses. The benefit to the municipality is strengthening the local economy by helping to reduce small business' operating expenses and reducing the community carbon footprint at no cost to local taxpayers. To earn points, a municipality must actively promote the Direct Install Program to local businesses in partnership with the NJCEP.

Residential Energy Efficiency Outreach

Green team partners with municipal officials to complete targeted outreach program for the Home Performance with Energy Star & Comfort Partners programs



The average participation rate improvement for the six HPwES efforts that have been certified to date in Sustainable Jersey is a "6.8-fold" increase (range low of 1.7 to a high of 15.6)

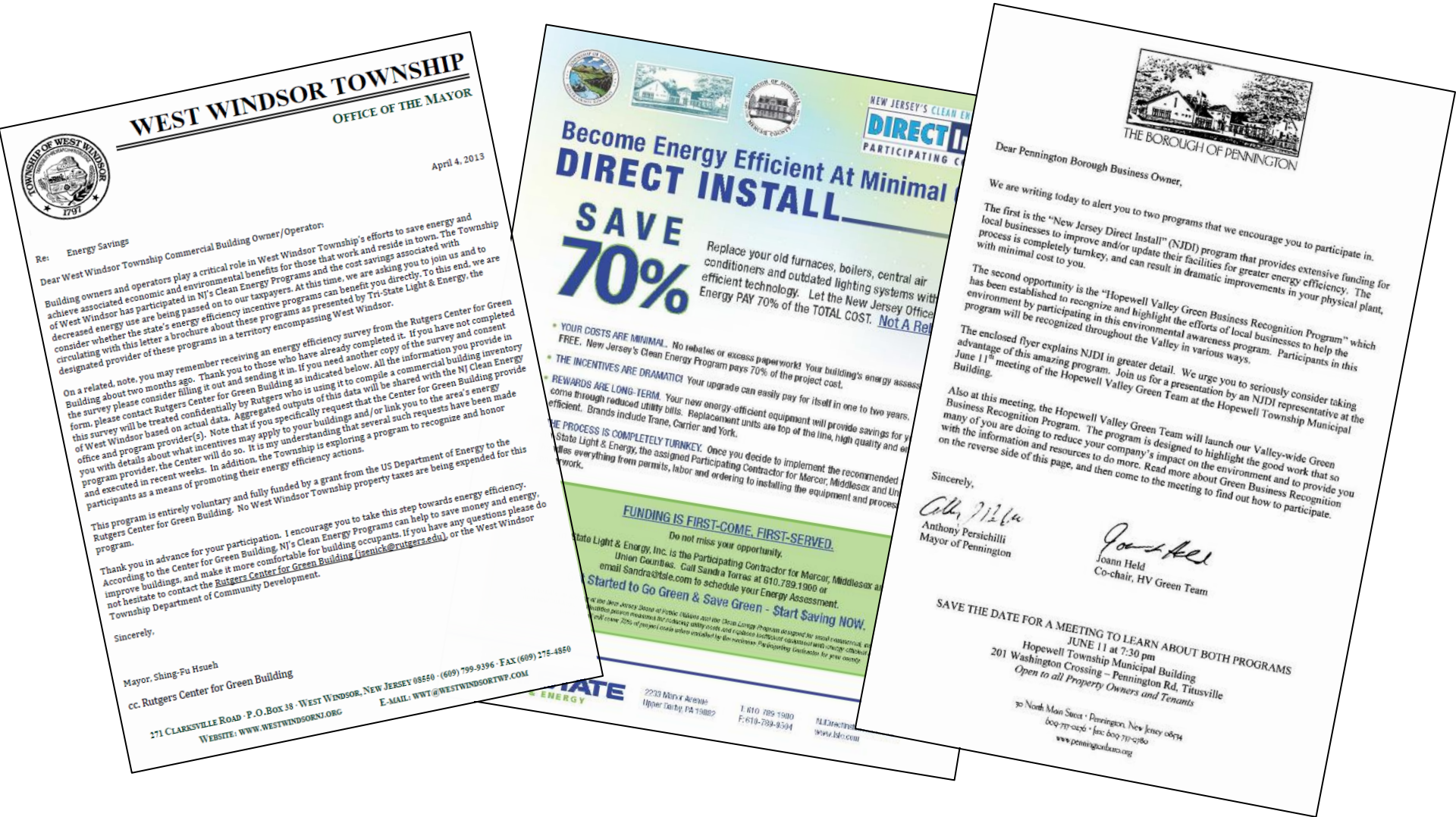
		Participation Rates					
Municipality	Households	2011	2012	2013	2014	2015	Total Completions
Glen Rock	3,672	0.16%	0.05%	0.27%	**0.63%**	**1.23%**	69
Highland Park	2,475	0.12%	**0.93%**	**1.82%**	0.53%	0.48%	114
Millburn	5,777	0.12%	0.02%	0.07%	0.02%	**0.12%**	24
Princeton	5,739	0.63%	0.51%	0.51%	**1.10%**	**0.71%**	301
Watchung	1,735	0.23%	0.06%	0.23%	0.06%	**0.35%**	19
Woodbridge	24,406	0.00%	0.00%	**0.02%**	**0.19%**	1.72%	509
Statewide	**2,102,465**	**0.13%**	**0.18%**	**0.23%**	**0.26%**	**0.30%**	**30,060**

Residential Energy Efficiency Outreach

- Action combines into a sliding point scale the two approaches that have been successfully piloted and implemented by Sustainable Jersey municipalities.
  - ***20 points*:** The municipality identifies a single, municipally-approved contractor to perform Home Performance with Energy Star audits through a competitive RFP/RFQ process.
  - ***10 points*:** The municipality performs outreach to residents about the Home Performance with Energy Star but does not require the issuance of an RFP by the municipality that results in a single energy audit provider.
- The action now includes more detailed guidance on including the Comfort Partners program in residential energy efficiency outreach efforts.
- New section establishing guidelines for this action that will be required as part of achieving a GOLD Star in energy.

Commercial Energy Efficiency Outreach

Green team partners with municipal officials to complete targeted outreach program to local businesses for the Direct Install program



WEST WINDSOR TOWNSHIP
OFFICE OF THE MAYOR

April 4, 2013

Re: Energy Savings

Dear West Windsor Township Commercial Building Owner/Operator:

Building owners and operators play a critical role in West Windsor Township's efforts to save energy and achieve associated economic and environmental benefits for those that work and reside in town. The Township of West Windsor has participated in NJ's Clean Energy Programs and the cost savings associated with decreased energy use are being passed on to our taxpayers. At this time, we are asking you to join us and to consider whether the state's energy efficiency incentive programs can benefit you directly. To this end, we are circulating with this letter a brochure about these programs as presented by Tri-State Light & Energy, the designated provider of these programs in a territory encompassing West Windsor.

On a related, note, you may remember receiving an energy efficiency survey from the Rutgers Center for Green Building about two months ago. Thank you to those who have already completed it. If you have not completed the survey please consider filling it out and sending it in. If you need another copy of the survey and consent form, please contact Rutgers Center for Green Building as indicated below. All the information you provide in this survey will be treated confidentially by Rutgers who is using it to compile a commercial building inventory of West Windsor based on actual data. Aggregated outputs of this data will be shared with the NJ Clean Energy office and program provider(s). Note that if you specifically request that the Center for Green Building provide you with details about what incentives may apply to your buildings and/or link you to the area's energy program provider, the Center will do so. It is my understanding that several such requests have been made and executed in recent weeks. In addition, the Township is exploring a program to recognize and honor participants as a means of promoting their energy efficiency actions.

This program is entirely voluntary and fully funded by a grant from the US Department of Energy to the Rutgers Center for Green Building. No West Windsor Township property taxes are being expended for this program.

Thank you in advance for your participation. I encourage you to take this step towards energy efficiency. According to the Center for Green Building, NJ's Clean Energy Programs can help to save money and energy, improve buildings, and make it more comfortable for building occupants. If you have any questions please do not hesitate to contact the Rutgers Center for Green Building (jsenick@rutgers.edu), or the West Windsor Township Department of Community Development.

Sincerely,

Mayor, Shing-Fu Hsueh

cc. Rutgers Center for Green Building

271 Clarksville Road · P.O.Box 38 · West Windsor, New Jersey 08550 · (609) 799-9396 · Fax (609) 275-4850
Website: www.westwindsornj.org E-mail: wwt@westwindsortwp.com

NEW JERSEY'S CLEAN ENERGY PROGRAM
DIRECT INSTALL
PARTICIPATING CONTRACTOR

Become Energy Efficient At Minimal Cost

DIRECT INSTALL

SAVE 70%

Replace your old furnaces, boilers, central air conditioners and outdated lighting systems with efficient technology. Let the New Jersey Office of Clean Energy PAY 70% of the TOTAL COST. Not A Rebate

- YOUR COSTS ARE MINIMAL. No rebates or excess paperwork! Your building's energy assessment is FREE. New Jersey's Clean Energy Program pays 70% of the project cost.
- THE INCENTIVES ARE DRAMATIC! Your upgrade can easily pay for itself in one to two years.
- REWARDS ARE LONG-TERM. Your new energy-efficient equipment will provide savings for years to come through reduced utility bills. Replacement units are top of the line, high quality and energy efficient. Brands include Trane, Carrier and York.
- THE PROCESS IS COMPLETELY TURNKEY. Once you decide to implement the recommended upgrades, Tri-State Light & Energy, the assigned Participating Contractor for Mercer, Middlesex and Union Counties, handles everything from permits, labor and ordering to installing the equipment and process the paperwork.

FUNDING IS FIRST-COME, FIRST-SERVED.
Do not miss your opportunity.
Tri-State Light & Energy, Inc. is the Participating Contractor for Mercer, Middlesex and Union Counties. Call Sandra Torres at 610.789.1900 or email Sandra@tsle.com to schedule your Energy Assessment.
Get Started to Go Green & Save Green - Start Saving NOW.

Tri-State ENERGY
2233 Mayor Avenue
Upper Darby, PA 19082
T: 610-789-1900
F: 610-789-9504
NJDirect@tsle.com
www.tsle.com

THE BOROUGH OF PENNINGTON

Dear Pennington Borough Business Owner,

We are writing today to alert you to two programs that we encourage you to participate in.

The first is the "New Jersey Direct Install" (NJDI) program that provides extensive funding for local businesses to improve and/or update their facilities for greater energy efficiency. The process is completely turnkey, and can result in dramatic improvements in your physical plant, with minimal cost to you.

The second opportunity is the "Hopewell Valley Green Business Recognition Program" which has been established to recognize and highlight the efforts of local businesses to help the environment by participating in this environmental awareness program. Participants in this program will be recognized throughout the Valley in various ways.

The enclosed flyer explains NJDI in greater detail. We urge you to seriously consider taking advantage of this amazing program. Join us for a presentation by an NJDI representative at the June 11th meeting of the Hopewell Valley Green Team at the Hopewell Township Municipal Building.

Also at this meeting, the Hopewell Valley Green Team will launch our Valley-wide Green Business Recognition Program. The program is designed to highlight the good work that so many of you are doing to reduce your company's impact on the environment and to provide you with the information and resources to do more. Read more about Green Business Recognition on the reverse side of this page, and then come to the meeting to find out how to participate.

Sincerely,

Anthony Persichilli
Mayor of Pennington

Joann Held
Co-chair, HV Green Team

SAVE THE DATE FOR A MEETING TO LEARN ABOUT BOTH PROGRAMS
JUNE 11 at 7:30 pm
Hopewell Township Municipal Building
201 Washington Crossing – Pennington Rd, Titusville
Open to all Property Owners and Tenants

30 North Main Street · Pennington, New Jersey 08534
609-737-0276 · fax: 609-737-2980
www.penningtonboro.org

Commercial Energy Efficiency Outreach

- Action combines into a sliding point scale the Direct Install outreach campaign to local businesses as well as the incentive for reaching a municipal target
  - ***10 points*:** Municipalities will earn 10 points for implementing an outreach and education effort detailing the advantages of the Direct Install program for local businesses.
  - ***For an additional10 points*:** Your municipality can earn 10 points toward certification if it can achieve a target goal of 5% participation rate for the local business community.
- New section establishing guidelines for this action that will be required as part of achieving a GOLD Star in energy.

Thank You!

For further information, contact:

- Tony O'Donnell, Economist
  - Email: odonnela@tcnj.edu
  - Phone: 609.771.2921
- Nancy Quirk, Energy Program Manager
  - Email: quirkn@tcnj.edu
  - Phone: 609.771.2902
- Sustainable Jersey websites

  www.sustainablejersey.com

  www.sustainablejerseyschools.com

Mike Thulen

ESIP Coordinator – NJ Board of Public Utilities

New Jersey's Clean Energy Program

October 23-26, 2017

Education
FOR A COMMON
PURPOSE

Opportunities for Commercial, and Institutional Buildings

Mike Thulen
NJ BPU – ESIP Coordinator

NJCEP BACKGROUND

- Administered by the New Jersey Board of Public Utilities
- Funded from “Societal Benefits Charge” on utility bill
- Program Goals:
  - Save energy and lower operating cost
  - Protect environment and lower emissions
  - Change the business mindset

PROGRAM PORTFOLIO

ELIGIBLE SECTORS

Commercial, Industrial, Government, Non-Profit, Institutional and Multifamily

PROGRAMS

Equipment Rebates:

- Retrofit – Existing Buildings
- New Construction
- Direct Install – Small Business
- Large Energy Users
- Sandy Relief Plan

Whole Buildings:

- Pay for Performance Existing Buildings
- Pay for Performance New Construction

Energy Generation:

- Combined Heat and Power (CHP) and Fuel Cells

Audits:

- Local Government Energy Audits

FREE BENCHMARKING REPORT

BENCHMARKING OVERVIEW

- Open to Commercial, Industrial, Agricultural, Government, Non-Profit and Institutional Customers
- Free Benchmarking Report includes:
  - An ENERGY STAR® Portfolio Manager score
  - Suggestions for improving operations and maintenance
  - Identification of relevant incentives and program options for energy efficiency projects

WHY BENCHMARK?

- Understand energy usage and costs
- First step for ENERGY STAR certification
- Identify under-performing facilities
- Assess effectiveness of operations
- Assist in goals, targets and timelines
- Set investment priorities
- Verify and document pre and post project energy use

Lafayette Elementary

- Benchmarking & green schools initiatives
- Savings from low/no-cost improvements identified in benchmark report
  - EPA score improved from 29 to 62
  - Energy usage reduced from 115.1 kBtu/ft^2 to 75.7 kBtu/ft^2 (34% improvement)
- Annual Savings
  - 40,951 kWh (7.5% improvement)
  - 7,986 therms (13.4% improvement)
  - $15,158

HOW TO PARTICIPATE

To Request a Benchmarking report:

- Visit NJCleanEnergy.com/BENCHMARKING
- Submit the online data collection form
- Submit 12 consecutive months of energy data or a signed Fuel/Energy Release Authorization Form

LOCAL GOVERNMENT ENERGY AUDIT (LGEA)

LGEA: HOW IT WORKS

- TRC Solutions (Clean Energy Program Manager) provides ASHRAE level II audit, using an on-line application process
- Strict parameters to analyze building(s) energy use
- Choose among list of recommended, cost-effective energy efficiency upgrades
- Apply for additional incentives from *New Jersey's Clean Energy Program*

NJ SMARTSTART BUILDINGS

SMARTSTART: OVERVIEW

- Two types of incentives for high efficiency equipment installation:
  - Prescriptive Incentives
  - Custom Incentives
- Available to all Commercial, Industrial, Agricultural, Government, Non-Profit and Institutional customers
- Includes New Construction, Rehab and Retrofit projects
- Project pre-approval required
- Incentives up to $500,000 per electric account and $500,000 per natural gas account.

SMARTSTART: INCENTIVES

Prescriptive Incentives

- Project Categories:
  - New Construction
  - Renovation
  - Remodeling
  - Equipment Replacement
- Specific incentives and individual applications for Lighting, HVAC, VFDs, Refrigeration, Controls and more.

SMARTSTART: INCENTIVES

Custom Incentives

- Designed for new or innovative technologies proven to be cost-effective and not listed as prescriptive
- Incentives paid for approved projects at the lesser of three values:
  - 50% of project cost
  - Buy down to one year payback, OR
  - $0.16/kWh, $1.60/ therm saved in first year
- Projects must have a minimum first year energy savings of 75,000 kWh or 1,500 therms to be eligible.

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
- Green Schools Savings
  - 266,240 kWh (20.9% improvement)
  - $38,605

DIRECT INSTALL

DIRECT INSTALL: OVERVIEW

- A turn-key retrofit program to replace outdated and inefficient equipment
- Lighting, HVAC, Refrigeration
- Open to Small to Mid-Sized Commercial and Industrial facilities with a peak electric demand ≤ 200 kW
- **Provides incentives of 70% of the installed cost**
- Incentives are paid directly to the contractor
  - Customer only pays remaining 30% of installed cost
  - $125,000 project cap
  - $250,000 per entity cap

DIRECT INSTALL EXAMPLES

EDEN AUTISM SERVICES

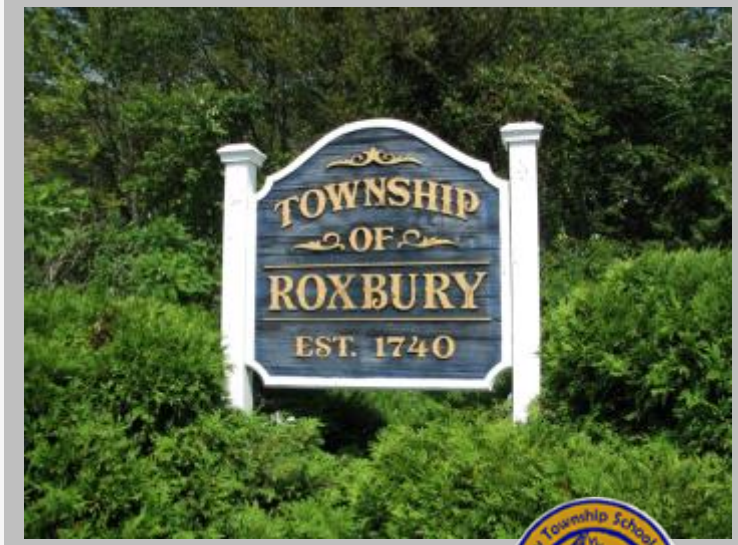
- Commercial Office
- Lighting & HVAC retrofit
- Total Project Cost: $96,741
- **Incentive: $67,719**
- **Annual Savings: $14,124**
- **Payback Period: 2.05 Years**

HAMILTON TOWNSHIP FIRE DISTRICT #2

- Municipal Fire Station
- Lighting & HVAC retrofit
- Total Project Cost: $125,664
- **Incentive: $87,965**
- **Annual Savings: $12,961**
- **Payback Period: 2.9 Years**

ROXBURY TOWNSHIP PUBLIC SCHOOLS

- Public Elementary School
- Lighting & HVAC retrofit
- Total Project Cost: $119,740
- **Incentive: $83,818**
- **Annual Savings: $16,229**
- **Payback Period: 2.2 Years**



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
- Payback Period – 3 Months
- Green Schools Savings
  - 22,720 kWh (2.2% improvement)
  - 6,341 therms (14.8% improvement)
  - $9,353

CHURCH OF THE NATIVITY

- Catholic parish and non-profit school in Midland Park
- Lighting & HVAC retrofit
- Total Project Cost: $24,872
- **Incentive: $17,410**
- **Annual Savings: $2,937**
- **Payback Period: 2.5 Years**

Church of the Nativity
A Stewardship Parish

PAY FOR PERFORMANCE (P4P)

P4P: OVERVIEW

- Comprehensive, whole-building approach to saving energy in existing or new facilities
- Goal: reduce consumption by 15% or more
- Incentives up to $2 million per project, assuming both gas and electric improvements are made; $4 million annual entity cap
- Incentives paid in three installments at milestones
- Customer chooses from network of pre-approved participating Partners

P4P: HOW IT WORKS

- Projects must create an Energy Reduction Plan
  - Prior 12 month energy use baseline for existing buildings
  - Current energy code baseline for new construction projects
  - Incentive Milestone #1 of up to $50,000
- Implementation of Project
  - Must finish construction or renovation to qualify
  - New Construction projects must submit an As-Built
  - Energy Reduction Plan to address any changes during construction
  - Incentive Milestone #2 paid to customer

PAY FOR PERFORMANCE EXAMPLES

NEWARK PUBLIC SCHOOLS

- 6 high schools
- New boilers and water heaters, motors, controls, lighting
- Total Project Cost: $19 million
- **Incentive: $1,515,255**
- **Annual Savings: $990,000**
- **Payback Period: 17 Years**

(Energy Savings Improvement Program, ESIP)

EDIBLE GARDEN

- New construction 214,000-square foot greenhouse in Belvidere
- Thermal nighttime canopy, condensing boilers, variable frequency drives on pump motors
- Total Project Cost: $720,005
- **Incentive: $315,673**
- **Annual Cost Savings: $56,845**
- **Payback period: 7.1 years**

COMBINED HEAT & POWER AND FUEL CELLS

CHP/FC: OVERVIEW

- Incentives range from $0.35-$4.00/watt
- Cap of $2-$3 million depending on technology and size
- Incentives paid in three phases:
  - 30% at equipment purchase
  - 60% at installation completion
  - 10% at performance verification

CHP/FC: BENEFITS

- Lower cost: reduces overall electricity purchases from utility
- Less risk: company's energy prices more stable over time
- More reliable: may reduce disruptions from electric grid
- Less waste: utilizes heat that would otherwise be wasted
- More sustainable: on-site generation results in less greenhouse gas emissions

COMBINED HEAT & POWER AND FUEL CELLS EXAMPLES

STEVE & COOKIE'S

- Restaurant by the Jersey Shore
- Micro CHP
- Total Project Cost: $189,600
- **Incentive: $40,000**
- **Annual Cost Savings: $20,588**
- **Payback Period: 6.3 Years**

RIDER UNIVERSITY

- 280 acre college campus
- Combined Heat and Power (CHP)
- Total Project Cost: $4,594,188 (estimated)
- **Incentive: $1,000,000**
- **Annual Cost Savings: $527,973**
- **Payback Period: 6.8 Years**
- Manufacturing and construction anticipated to generate 25 temporary full-time jobs

PRINCETON UNIVERSITY

- College/University
- CHP Equipment
- Total Project Cost: $914,557
- **Incentive: $243,000**
- **Annual Savings: $250,000**
- **Payback Period: 2.68 Years**

New Jersey Board of Public Utilities

Energy Saving Improvement Programs

aka: **ESIP**; P.L. 2012, c. 55

Mike Thulen
ESIP Manager

What ESIP is all about

- Retrofitting public facilities with Energy Conservation Measures (ECM) without new capital investment
  - Savings from reduced energy use pays for the improvements = No New Money!
- Applies to all government contracting units, including school districts

ECM Categories:

- Distributed generation (solar, wind, geo, bio…)
- Major HVAC (capital) and minor HVAC (non-capital)
- Energy efficiency, demand response equipment
- Non-energy savings related (building envelope)
- Future capital replacements
- Standalone lighting improvements
- New energy related capital improvements, i.e., new air conditioning installation Must be funded separately from non-operating (i.e., capital improvement) funds
- **Water savings, i.e., low flow fixtures**

Develop the ESIP

- **Step 1** – Perform independent audit
  - Third party – not the ESCO
- **Step 2** – Hire ESCO or Mechanical Engineer to prepare Energy Savings Plan
  - If competitive process, use the audit as basis for proposals
  - ESCO must agree to provide an optional energy savings guarantee
- **Step 3** – Develop Energy Savings Plan
  - Identify the Energy Conservation Measures and projected energy savings
  - Savings based on BPU adopted standards

How the ESIP is Funded

- An ESIP is either a Self Refunding Bond or Lend-Lease Operation
- Capital Project Energy refunding comes from the energy savings that were budgeted as energy line item in the general budget.
- Incentives from Clean Energy
- Demand Response Savings through lower energy use.
- Energy Resiliency Bank
- Federal Tax Incentives from (Lend-Lease programs)

- **ROID Grants cannot be combined with ESIP**

Option A – ESCO Option

ESCO is a single contractor that develops & manages the process, including offering guaranteed savings.

Use public bidding or competitive contracting process to award a contract to a firm (ESCO) to develop & manage construction of improvements

ESCO must give a guarantee of savings opportunity to government entity

Contract award is for "most advantageous, price and other factors considered process" or "lowest responsible bidder."

Option B – DIY Model

Hire an energy consultant to develop your Energy Savings Plan

Develop your own specs and bid the job…

- Or hire professionals to provide that service

Rely on built-in verification process to assure savings

Option C – Hybrid Model – Combination of ESCO & DIY

- Hire an Architect or Mechanical Engineer to manage an ESCO project
- Develop a plan that the professional will put out to bid as a RFP
- Allow the professional to take the entity (gov't or school) through the interview process
- Allow the professional to be the liaison through the project to the ESCO

ESIP is a Funding Program

Requirements for an Energy Savings Plan

- No Negative Cash Flow
- No Capital Cost Avoidance (except on a very limited basis)
- No use of SREC's in Cost Savings Calculations
- Independent Third Party Review of Plan
- Maximum 15 Year Pay Back Standard Plan
- Maximum 20 Year Back with Combined Heat & Power Plan

BPU Jurisdiction of ESIP

Guidelines – The Final Word

RFP must be approved by the BPU

Mandatory pre-proposal conference for interested, DPMC certified ESCO's

BPU will receive, at a minimum, a CD or Flash Drive copy of each phase of the proposal and contract process

After Independent Third Party Review of Plan, BPU must approve plan

BPU has complete authority to deny any phase and Clean Energy Incentives when deemed necessary

Where is ESIP Program at Since 2012 start

- LGEA over 2400 building in the State of New Jersey can be audited.
- LGEA over 400 government entities, Municipalities, school districts and state agencies have been audited.
- Over 80 school districts have either started or are in the process of completing an ESIP project.
- Several large cities have started the ESIP process with bidding using the RFP provided by the BPU
- Clean Energy Program is fully funded to help the ESIP program
- Several school districts have used CHP to extend financing for 20 years without Clean Energy incentives

MEASUREMENT & VERIFICATION 2014

Entity	Projected Guaranteed Annual Savings	Actual Annual Savings	Percentage Difference
Barnegat School District	$317,151.00	$359,411.00	113.32%
Mercer VoTech	$1,015,724.00	$1,126,793.00	110.93%
Millville School District	$616,411.00	$803,820.00	130.40%
Salem County VoTech	$529,649.00	$623,562.00	117.73%
Wyckoff School District	$368,277.00	$403,642.00	109.60%
Kearny Township	$100,604.00	$122,534.00	121.79%
Bridgewater/Raritan RSD	$592,025.00	$593,612.00	100.26%
Hanover Twp School Dist.	$212,168.00	$218,104.00	102.79%
Phillipsburg	$442,341.00	$521,762.00	117.95%
Franklin Twp	$99,134.00	$103,543.00	104.44%
Somerset Hills	$345,944.00	$352,647.00	101.93%
Manalapan	$67,021.00	$78,623.00	117.31%
Newark Housing Authority	$4,212,128.00	$9,411,792.00	123.45%
	$8,918,577.00	$14,719,845.00	113.22%

Measurement & Verification

28 School Districts in 2016

Actual Savings

$21,119,701.00

Key Links

Clean Energy Incentives

http://www.njcleanenergy.com/commerical-industrial/home/home

ESIP information

http://www.njcleanenergy.com/commerical-industrial/programs/energy-savings-improvement-plan

Link to the ESIP legislation

http://www.njleg.state.nj.us/2012/Bills/AL12/55.pdf

Contacts

Mike Thulen / ESIP Manager esip@bpu.nj.gov

Ed Mercer / State Energy Mgr. esip@bpu.nj.gov

Gary Finger / Ombudsman esip@bpu.nj.gov

GETTING STARTED

Start with an Energy Audit:
NJCleanEnergy.com/LGEA

Issue a RFP for a Energy Cost Savings Plan: Boiler Plate Available
NJCleanEnergy.com/ESIP

Contract Issued
Work Begins
Energy Costs Drop
Savings Begin

Mike Thulen
ESIP Manager

Beth Lovejoy

Summit Environmental Commission Chairperson

Scott Fischer

Managing Member Ciel Power

Engaging City officials and staff

- Talk to officials in other municipalities about their experiences and get contact information from them.

- Find one City official who will promote the program.

- Suggest a meeting with a BPU representative or a BPU-certified contractor to answer questions that City officials may have.

Engaging City officials and staff

Highlight the benefits to the officials of the municipality:

- Program is voluntary and is offered as a service to homeowners
- No cost to the City to implement the program
- After the RFP is in place, all interactions take place between the residents and the contractor; the municipality is not involved in oversight and has no liability.

Summit Home

Energy Insight Program

Engaging City officials and staff

Highlight the benefits to homeowners:

- Saves homeowners the hassle of having to select a reputable BPU-certified contractor
- Highly discounted rate for the energy audits
- No obligation beyond the $49 for the audit
- Audit includes a check for gas and carbon monoxide leaks
- More comfortable home and energy cost savings if work is done
- BPU incentives – rebates and no- or low-interest financing

Summit Home

Energy Insight Program

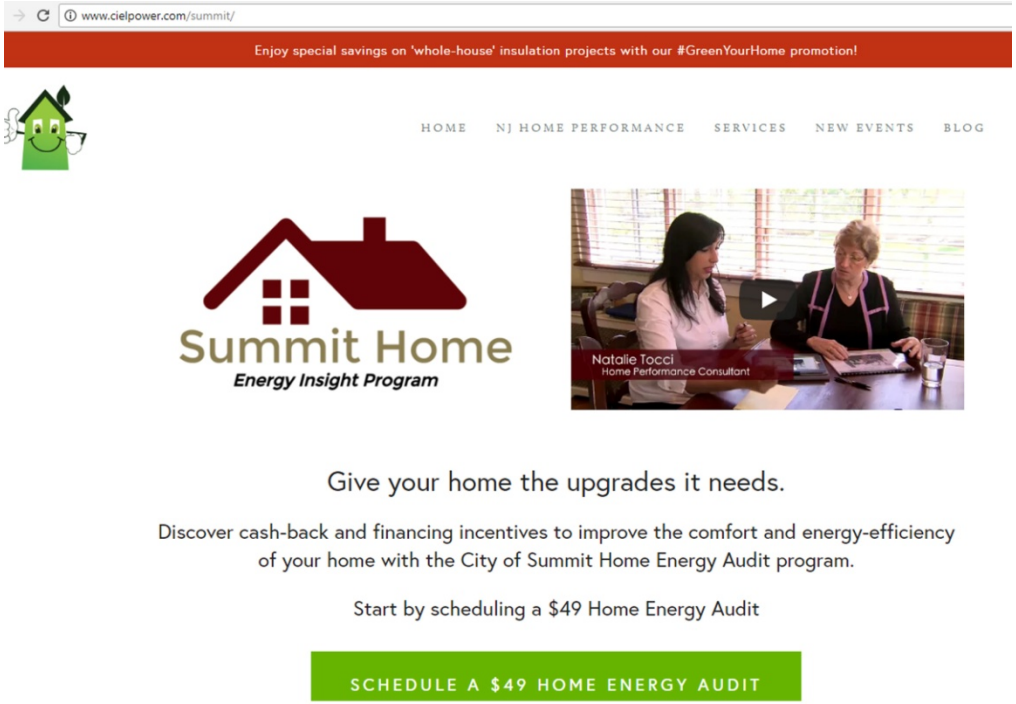
City Process

- Use Sustainable Jersey template.
- Choose goal for number of houses to be audited and time frame for the program.
- Present draft RFP to committees and Council for approval.
- Issue and publicize RFP; select vendor from responders.
- Choose a name for the program.
- Ask mayor to write introductory letter for mailings.

Summit Home
Energy Insight Program

Community Outreach for Summit Program

Ciel set up a separate landing page on its website for Summit.
http://www.cielpower.com/summit/



Summit Home

Energy Insight Program

Community Outreach for Summit Program

- Video of Mayor Radest's home energy audit shown on Hometowne TV, YouTube and Summit's page on Ciel website
- Ciel mailing to all Summit homeowners
- Information on City's website, including push notifications
- Discussed by mayor at televised Common Council meetings
- Press releases to local news outlets
- Social media posts – Facebook, Twitter, Nextdoor
- Brochures and flyers distributed at community events: Farmers Market, Community Night, National Night Out
- Scott Fischer on a panel at a local forum about energy

Summit Home

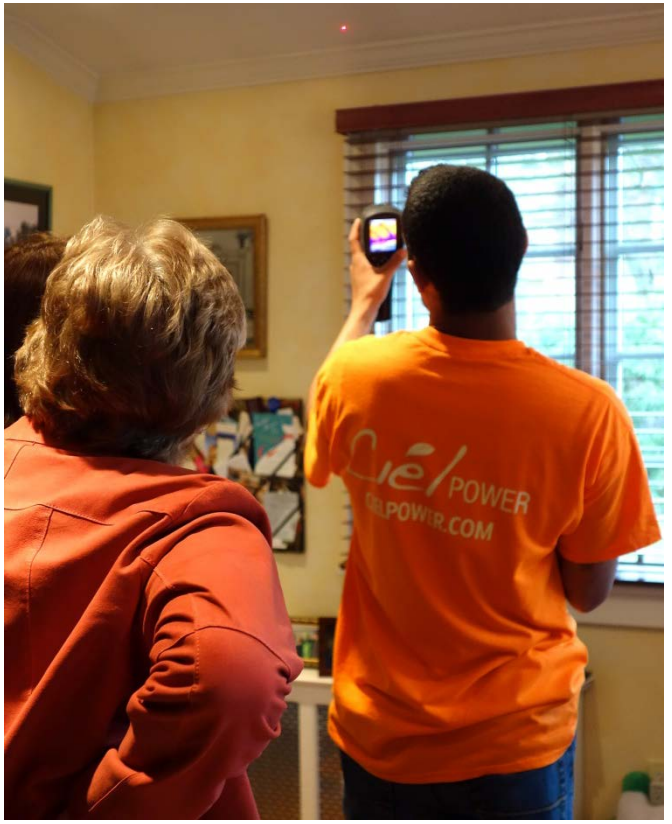
Energy Insight Program

Community Outreach for Summit Program

Summit Home

Energy Insight Program

Community Outreach for Summit Program



Summit Home
Energy Insight Program

Community Outreach for Summit Program

Social Media posts:

Summit Home

Energy Insight Program

Community Outreach for Summit Program

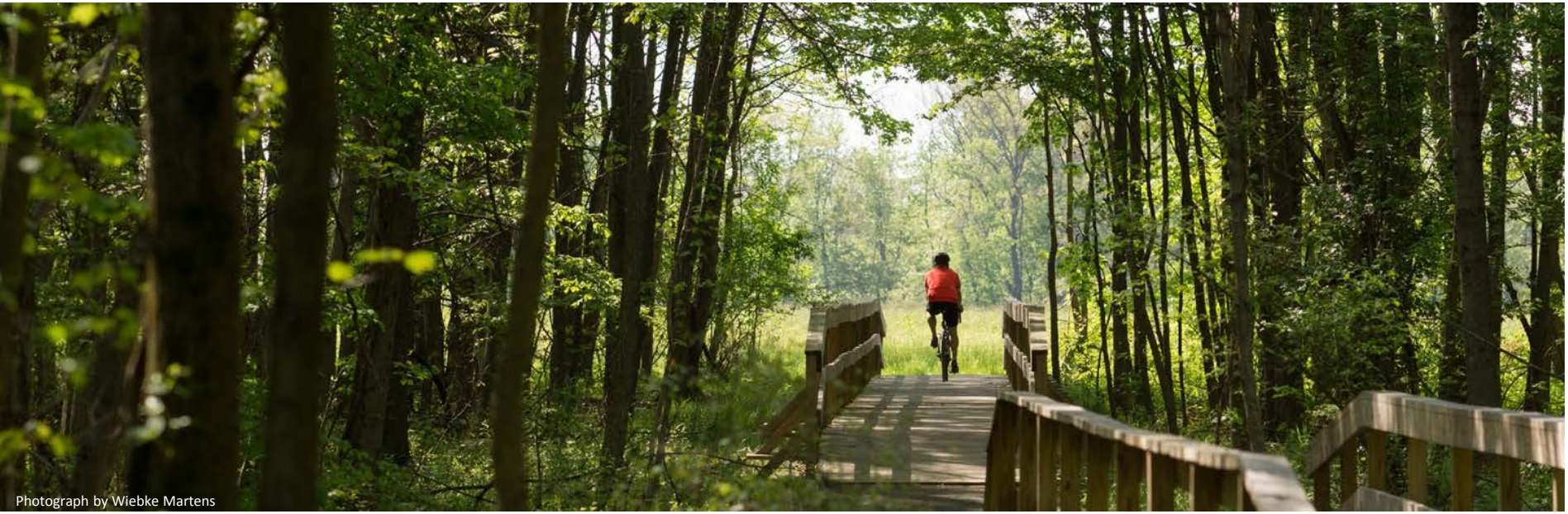
Information available at Community Events:

Christine Symington

Energy Director – Sustainable Princeton

Sustainable Princeton

Change a habit, change the world



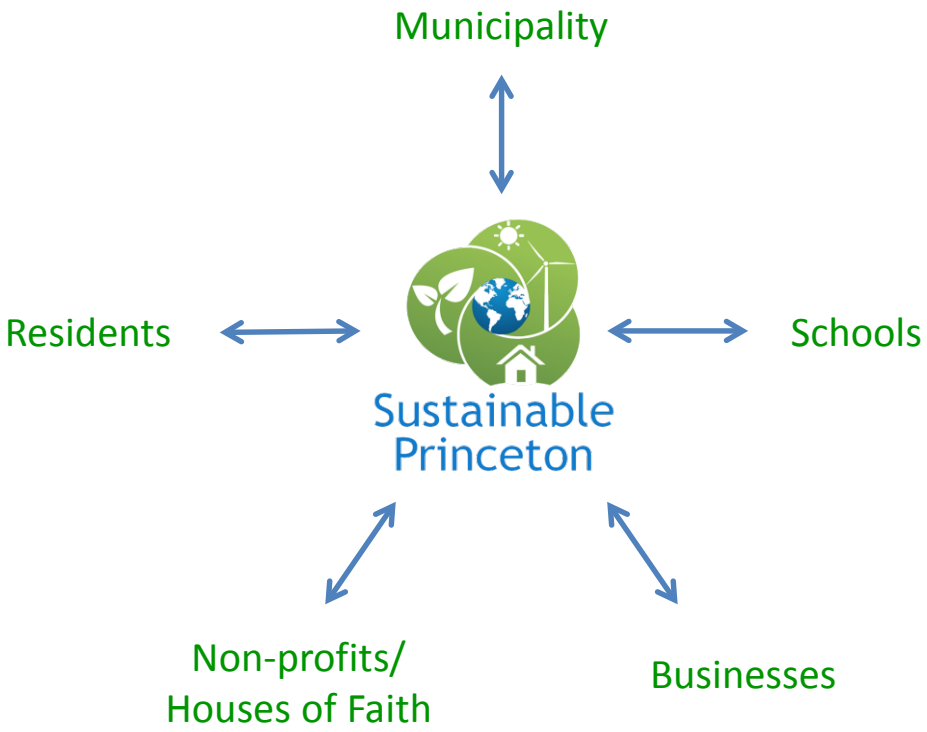
Photograph by Wiebke Martens

Municipal Leadership Strategies for Community Energy Efficiency

NJLM

November 16, 2017

Christine Symington, Program Director



Our mission is to inspire our community to develop and implement solutions that positively impact our environment.

2012

Housewarming

2013

EnergySmart Homes

2015

Received $35,000 Sustainable Jersey Gardinier Grant for EnergySmart Buildings

Housewarming

10 Homes weatherized by volunteers

EnergySmart Buildings

175+ Homes audited

37+ completed energy efficiency upgrades

Utilizing over **$80,000** in rebates and financing

Projected **25%** reduction in energy usage

Participation Reason	Participants	
	Number	Percent
Improve home comfort	26	41%
Reduce energy use	23	37%
Reduce energy bills	9	14%
Other	5	8%
Total	**63**	**100%**

Primary Reason for Installing Measures

	Participants	
	Number	Percent
Increase home comfort	8	38%
Reduce energy use	8	38%
Reduce energy costs	4	19%
Other	1	5%
Total	**21**	**100%**

Primary Reason for Not Installing All or Some Measures

	Participants	
	Number	**Percent**
Cost	15	36%
Time	5	12%
Projected benefits too low	4	10%
Waiting for other estimates/ working with other contractor	4	10%
Has not read report	3	7%
No recommended measures	3	7%
Uncertainty of energy savings	2	5%
Lack of knowledge	2	5%
Health and safety issues	2	5%
Issue with Ciel Power	2	5%
Total	**42**	**100%**

Program Marketing

The survey provided information to help Sustainable Princeton consider future program marketing.

- Information Source – The most common source of information about the program was the letter from Ciel Power, followed closely by Sustainable Princeton. Several participants noted that they trusted the program because of the Mayor's endorsement. Additionally, participants heard about the program in many different ways, so a multi-pronged approach to marketing would be most successful.

- Motivation for Participation – Respondents were most likely to report that their reason for participation was to improve the comfort of their home, followed by a desire to reduce their energy usage. These points should be emphasized in program marketing materials.

- Home Performance With Energy Star Rebates – Most respondents said that these rebates were very or somewhat important in their decision to request the audit, indicating that the availability of these rebates is also important to include in marketing efforts.

EnergySmart Buildings

27 Commercial Properties

Utilizing over **$350,000** in incentives

3 properties with real-time electricity monitors

Building Inventory

Objectives

- Understand stock of commercial properties in Princeton through use of survey
- Prioritize energy efficiency opportunities

Outcomes

- ~300 commercial properties
- Mostly small businesses & mixed commercial
- Many non-profits

Learnings

- Building facility managers are busy
- Labor intensive so plan accordingly

NJ Clean Energy Commercial Programs

Objectives

- Promote Direct Install to small commercial properties

Outcomes

- 7 completed DI
- 6 audited but not complete
- 6 inquired but no audit completed

Learnings

- Small business owners are busy
- Events about energy efficiency are hard to sell
- Program uncertainty affects adoption
- Letter from Mayor most effective
- Utility bills are hard to get
- Energy efficiency upgrade needs of owners not met by program (i.e. oil heat)

3 Case Studies

Objectives

- Understand unique challenges for different types of commercial properties
  - Non-profit
  - Retail business
  - Local Gov't
- Use realtime electricity data to

Outcomes

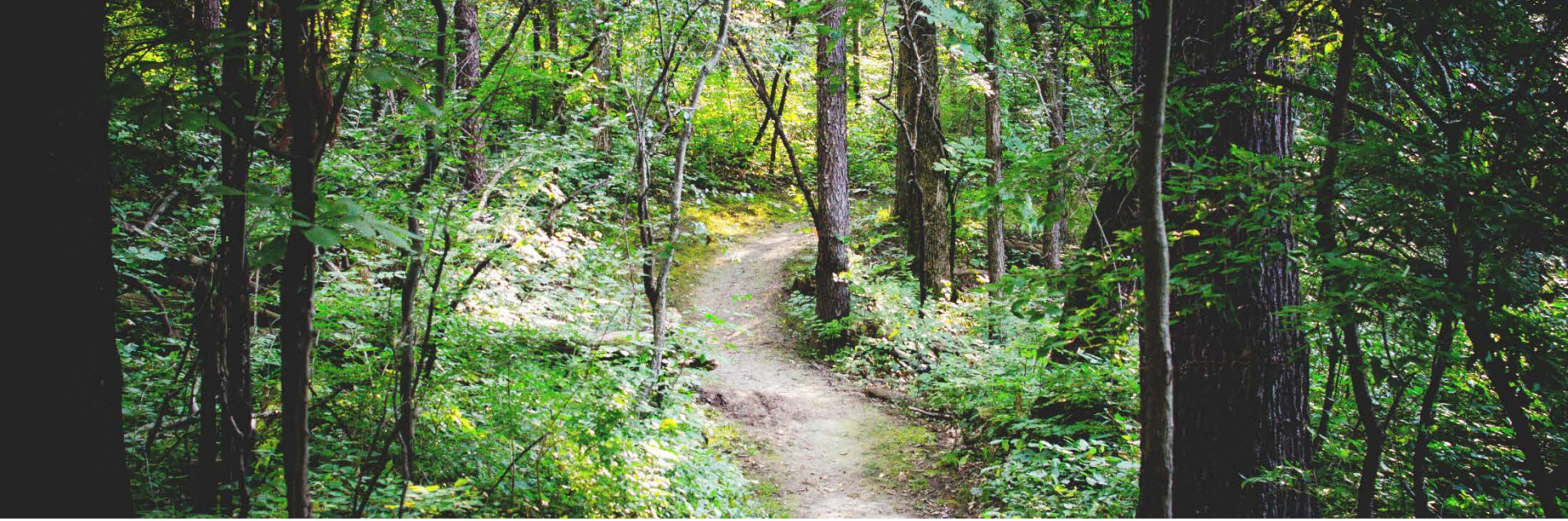
- Witherspoon Jackson Presbyterian Church
- Labyrinth Bookstore
- Princeton Municipal Building

Learnings

- Layers of decision making exist
- All buildings are not the same
- Technical assistance is necessary
- Data are good but you have to use them

Overall Learnings

- Relationships matter
- Timing
- NJ Clean Energy Programs require in depth understanding
- Crawl, walk, run
- NJ Clean Energy Programs are key for Princeton's climate action plans and greenhouse gas reduction goals



Thank You!

- Sign-up for our email list
- Join us on Facebook and on Twitter

Sustainable Princeton

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SUSTAINABLE JERSEY CERTIFIED
A Better Tomorrow, One Community at a Time


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A Better Tomorrow, One Community at a Time

Q&A