



Sustainable Jersey Energy: What's New - Gold

Presiding: The Honorable Shing-Fu Hsueh, Mayor, West Windsor Township
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New Jersey League of Municipalities

November 17, 2016

What's New -- Gold

- Opening Remarks by Mayor Shing-Fu Hsueh
- Introduction and Overview of Sustainable Jersey Gold
- Sustainable Jersey Gold Star in Energy
- Municipal Operations Actions
- Community Readiness and Engagement Actions
- Programs and Opportunities

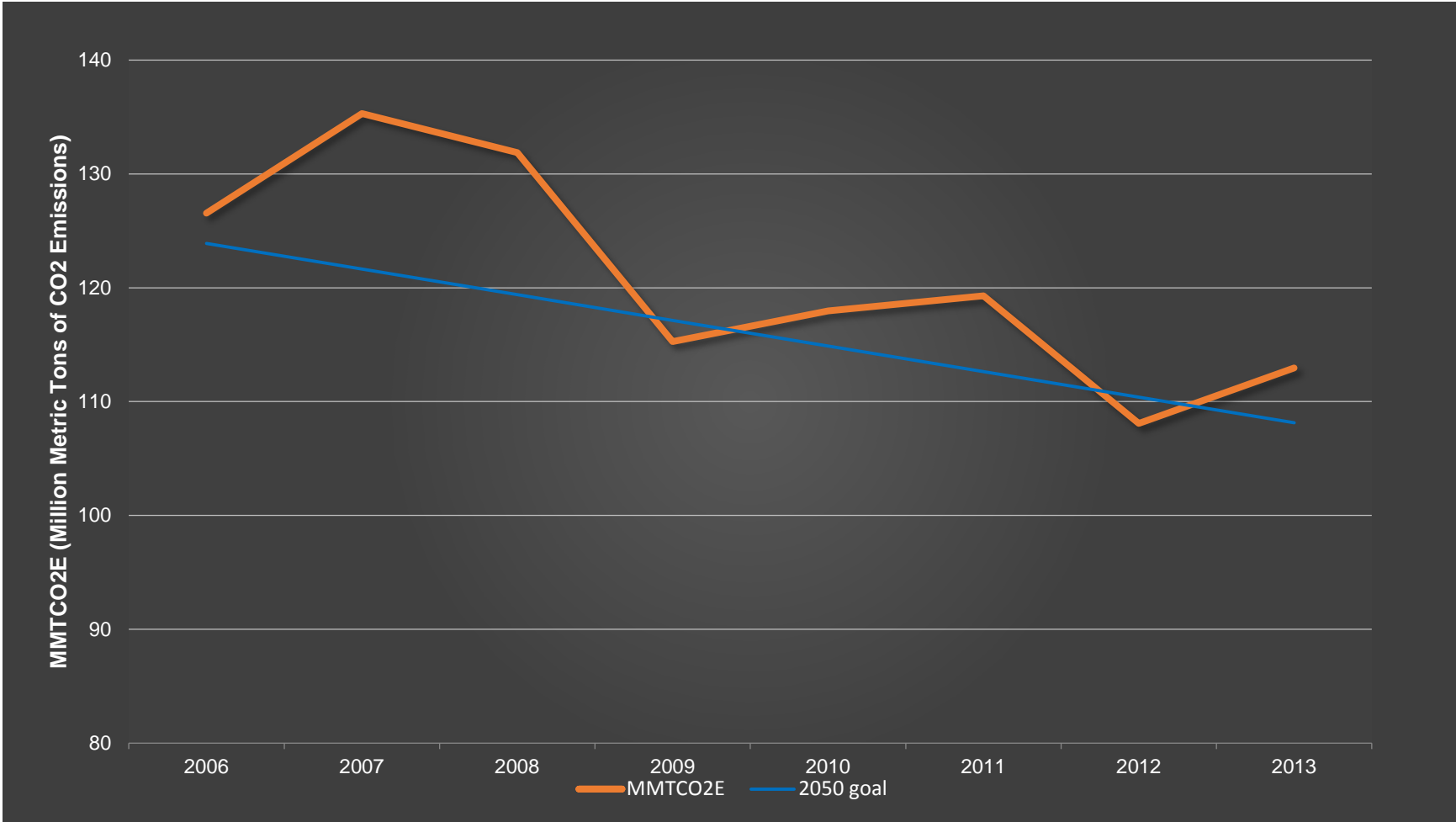


Sustainable Jersey Energy Goals

1. Decrease greenhouse gas emissions in time to avoid catastrophic climate impacts.
2. Increase the renewable energy fraction.
3. Increase resilience of energy system.
4. Increase affordability of energy.
5. Decrease risk to health from the energy system.



New Jersey Performance: Energy 2006-2012



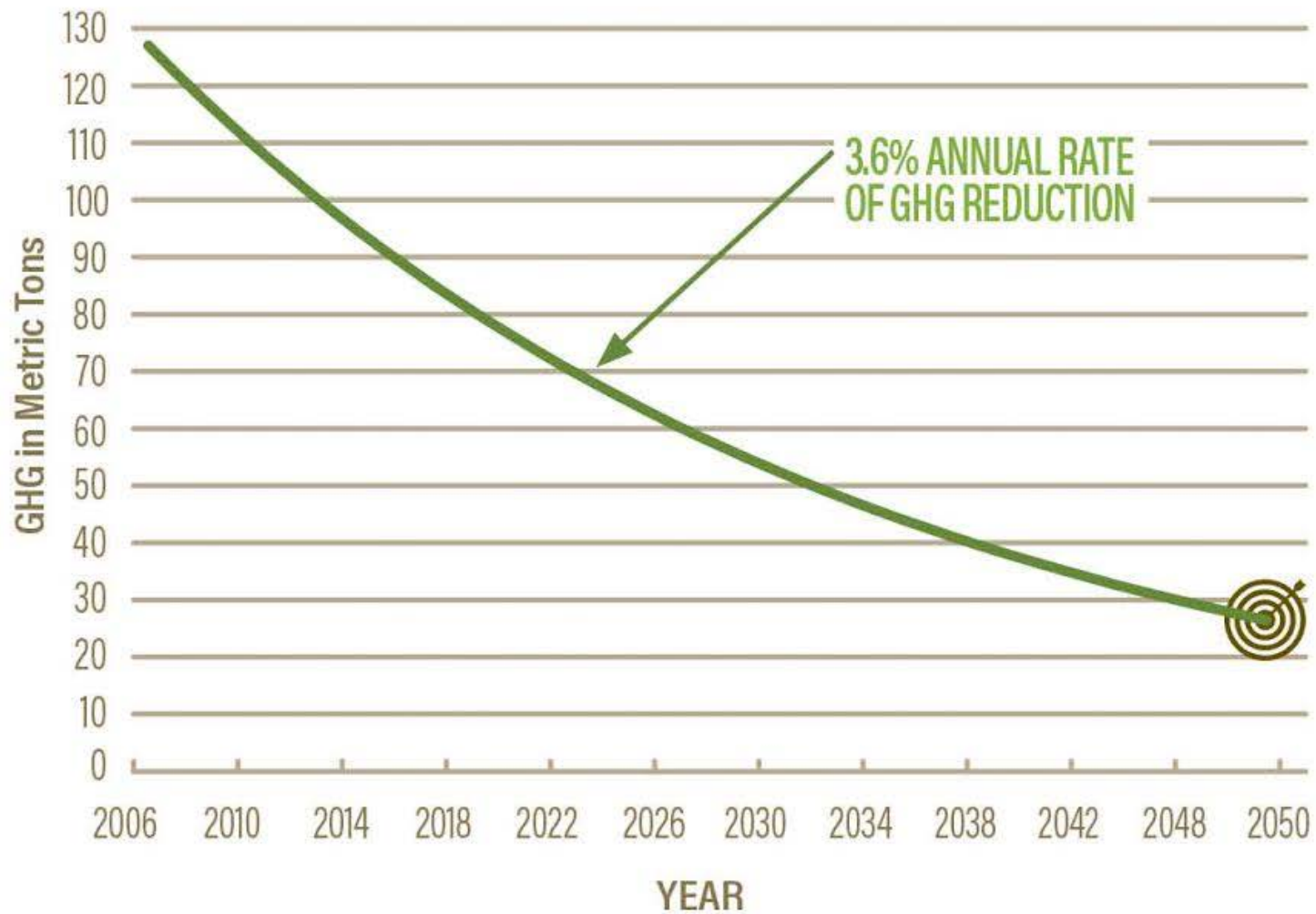
The Gold Star in Energy

Two municipal roles, two municipal standards:

- 1. Municipal operations:** Buildings, exterior lighting, fleets, etc.
- 2. Influencing the community:** Taking effective action to lower **community-wide** GHG



STATEWIDE REDUCTIONS REQUIRED BY GLOBAL WARMING RESPONSE ACT



Gold Star Standard: (1) Municipal Operations

- Lower GHG emissions from municipal operations and facilities **3.6% per year** to qualify for Gold.
- Maintain 3.6% rate of reduction (3-year average) to remain Gold.

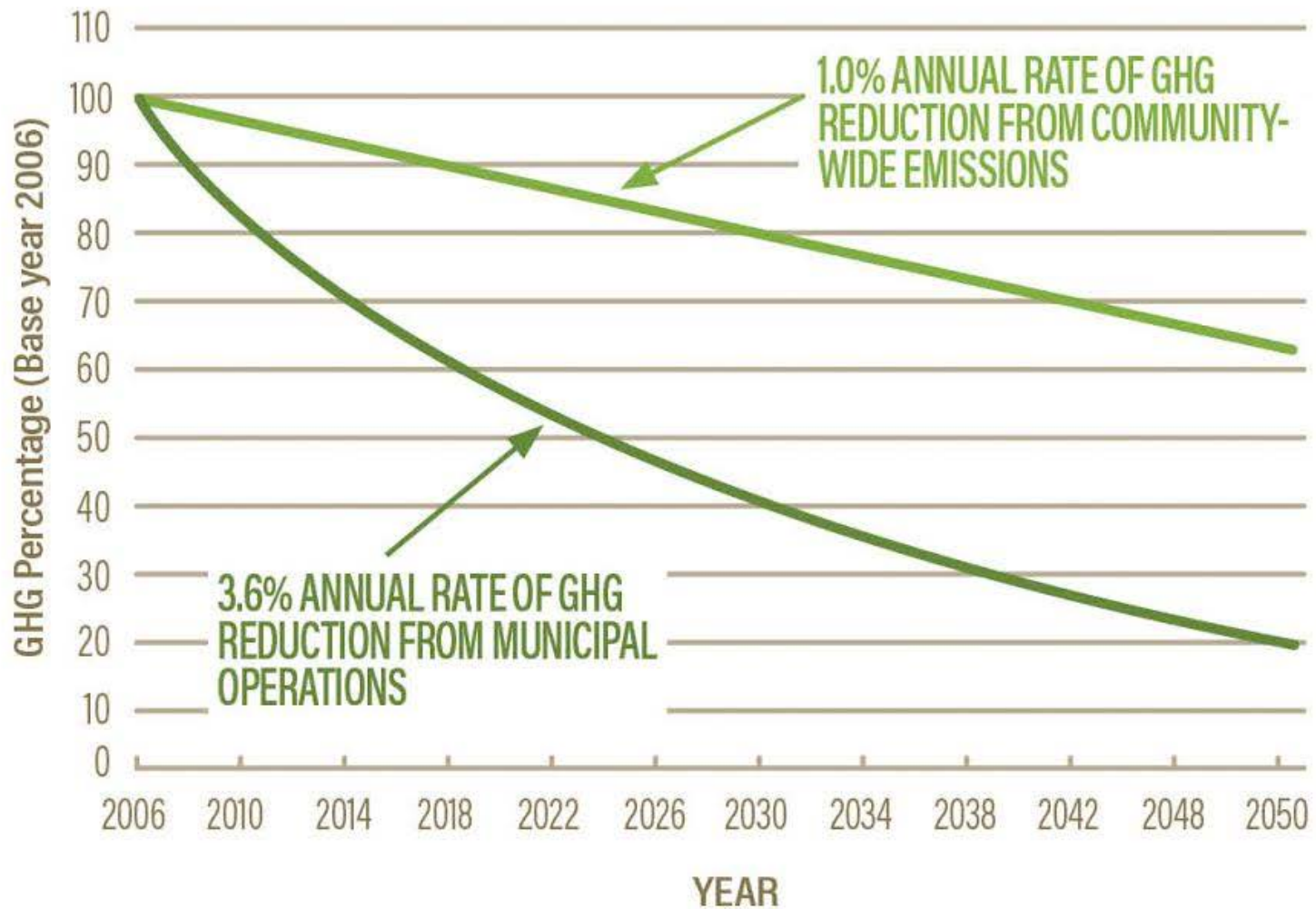


Strategies for Getting to Gold

MUNICIPAL OPERATIONS: GHG REDUCTION STRATEGIES AND GOAL

STRATEGIES AND ACTIONS TO ACHIEVE GOLD	TIME TO IMPLEMENT	IMPACT ON MUNICIPAL GHG
Renewable Energy Generation		4-38%
On-Site Solar System	1-2 years	1-35%
On-Site Wind System	3-5 years	<1%
Geothermal System	2-3 years	3%
Greening the Municipal Fleet		15-18%
Purchase Alternative Fuel or Efficient Vehicles	3-7 years	4%
Convert Vehicles to Alternative Fuel	1 year	2%
Trip Optimization Software	1 Year	3-6%
Proper Vehicle Maintenance	1 Year	6%
Driver Training	1 year	3%
Buildings and Street Lighting Efficiency		12-19%
Implement Energy Efficiency Measures	2-4 years	10-17%
Energy Tracking & Management	1 year	2%
Estimated Impact from Reduction Strategies		31-75%

REDUCTIONS REQUIRED FOR GOLD STAR IN ENERGY



Strategies for Getting to Gold

COMMUNITY-WIDE GHG EMISSIONS: REDUCTION STRATEGIES AND GOAL

STRATEGIES AND ACTIONS TO ACHIEVE GOLD	TIME TO IMPLEMENT	IMPACT ON MUNICIPAL GHG
Renewable Energy Generation		6-11%
Community Purchase of Green Energy (Aggregation)	1-2 years	4-7%
Community-led Solar Initiatives	1-2 years	2-4%
Mobile Sources (vehicles)		10-18%
Public Alternative Fuel Vehicle (AFV) Refueling Station	1 year	5-10%
AFV Infrastructure Permitting and Zoning	1-2 years	
Development Patterns/Intensity	5-10 years	5-8%
Promoting Walking and Bicycling	2-10 years	
Building Energy Efficiency		3-4%
Commercial Sector Outreach (Direct Install)	1-2 years	≈1%
Outreach to Residents (Home Performance w/Energy Star)	1-2 years	≈1%
Tree Canopy (Shading Effect)	1-10 years	1-2%
Estimated Impact from Reduction Strategies		19-33%

Gold Star Standard: (2) Influencing community

(2) Lower community-wide GHG by taking 6 SJ actions:

- Make Your Town Electric Vehicle Friendly
 - Public Electric Vehicle Charging Infrastructure
 - Make Your Town Solar Friendly
 - Community Led Solar Initiatives
 - Residential Energy Efficiency
 - Commercial Energy Efficiency
- After 6 years, SJ to determine if community met 1% annual reduction by tracking GHG emissions over time (adjusting for weather & carbon intensity of electric grid).

Municipal Operations Actions

- Energy Efficiency for Municipal Buildings (NEW)
- Greening the Municipal Fleet
 - Purchase Alternative Fuel or Efficient Vehicles
 - Vehicle Conversions
 - Driver Training
- Renewable Energy Options
 - On-Site Solar
 - Geothermal
 - On-Site Wind

Energy Efficiency for Municipal Buildings (NEW)

- Purpose: combine audit & implementation actions to streamline and simplify process for Green teams
- Sliding scale: 5 to 50 points
- Seven different point levels available
 - First four tiers award points (5-20) for either audits or upgrades but do not require that the Green team to provide an Energy Use Intensity (EUI) calculation
 - Highest three tiers award points (30-50) based on improvements in municipal building portfolio that are documented with an Energy Use Intensity score improvement



Greening the Municipal Fleet

Three current SJ actions directly affect ability to reach the new municipal Gold standard

- Purchase Alternative Fuel or Efficient Vehicles
- Vehicle Conversions
- Driver Training

In addition to the current SJ actions, we identified two other actions that can significantly contribute to fleet carbon emission reductions

- Trip Optimization Software
- Proper Vehicle Maintenance



Renewable Energy Options

Three current SJ actions directly affect ability to reach the new municipal Gold standard

- On-Site Solar – the wide range on this estimate is due to the site specific conditions that exist across the state. For those municipalities unable to physically erect a system, options for the purchase of cleaner energy do exist
- Geothermal Energy system
- On-Site Wind

Community Readiness and Engagement Actions

- Residential Energy Efficiency
- Commercial Energy Efficiency
- Make Your Town Electric Vehicle Friendly
- Public Electric Vehicle Charging Infrastructure
- Make Your Town Solar Friendly
- Community Led Solar Initiatives





Renewable Government Energy Aggregation

- Purpose: Utilize NJ Community Energy Aggregation Law to spur adoption of cleaner energy
- Sliding Scale: 5 to 50 points
- Four different point levels available
 - Point levels recognize the level of impact that adopting various amounts of clean energy above the Renewable Portfolio Standard will have on community wide emissions
 - Automatic opt-in feature of the law that was implemented about 5 years ago makes this the potentially most powerful tool for a community to reduce their carbon emission profile.





Residential Energy Efficiency Upgrades (NEW)

- Purpose: Combines the two current Home Performance with Energy Star actions into one action.
- Sliding Scale: 10 to 20 points
- Two different point levels available
 - Research shows a 7-fold increase in community participation for those Green teams that approved a municipally-sanctioned auditor through a competitive RFP process
 - Outreach without going through the RFP process has also show to be effective
 - Ad-hoc committee is looking to adopt improvements to the action that will focus on completions and will expand the number of contractors to be approved through RFP process





Commercial Energy Efficiency Upgrades (NEW)

- Purpose: Combines the two current Direct Install outreach actions into one action.
- Sliding Scale: 10 to 20 points
- Two different point levels available
 - A base of 10 points is awarded for implementing the outreach program in conjunction with municipal officials and DI contractor support as described in the action
 - An additional 10 points is earned by achieving a target goal of 5% of commercial properties to participate in the DI program
 - The Gold star standard for this action will be based on a DI program participation rate that represents performance in the top 10% of New Jersey municipalities (still doing research that will result in a firm number).

Make Your Town Electric Vehicle Friendly Action

- Purpose: facilitate adoption of EV by consumers
- 15 points
- Required activities
 - Zoning ordinance addressing EV charging stations as accessory use
 - Update parking policies to encourage EV charging station installations
 - Training for local officials
- Outreach activities (must do TWO)
 - Incentive for pre-wiring for EV charging station
 - Awareness event
 - Commitment from 3 local partners for workplace chargers
 - Commitment from 3 local partners for multi-family chargers



Make Your Town EV Friendly: Options

- Workplace Chargers
 - THREE local partners install workplace charging stations
 - Potentially doubles daily driving range for employees
 - Potentially earn LEED points for the building
 - Employee recruitment and retention; public image
- Multi-Family Home Chargers
 - THREE local multi-family dwelling units
 - Overnight residential charging stations
 - Most apartment dwellers don't purchase EVs
- Awareness Event
 - National Drive ELECTRIC Week



Public EV Charging Infrastructure Action

- Publicly available EV Charging Station
 - 15 points
 - Different from workplace or home based charging
 - Helps address 'range anxiety'
- Mandatory:
 - Municipality instrumental in the project
 - Publicly available
- Charging station may be:
 - Located on private property
 - Owned and operated by a local nonprofit



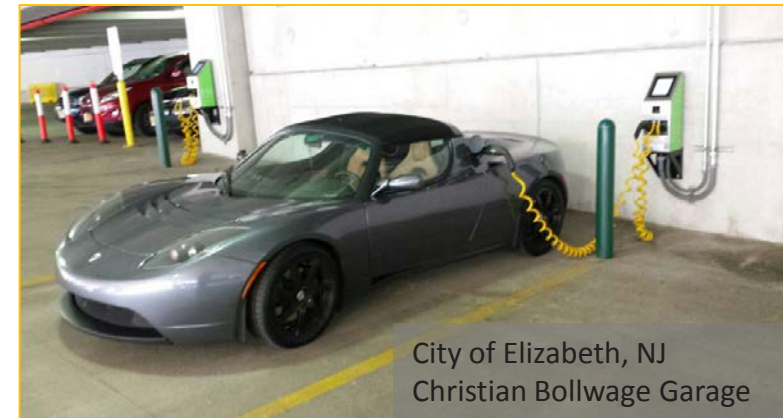
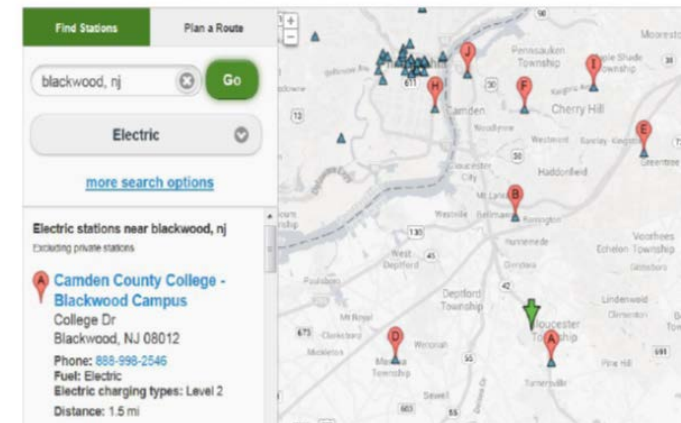
Image: EERE. Plug-in Electric Vehicle Handbook.
www.afdc.energy.gov/uploads/publication/pev_workplace_charging_hosts.pdf

Public EV Charging Infrastructure

- Public EV Charging Infrastructure
 - Flexible on where charger installed
 - Flexible on how charger is financed
 - Identifying best location is critical
 - Including on “public directory” is key requirement
 - Signage/Promotion of Charging Stations

Alternative Fueling Station Locator

Find alternative fueling stations near an address or ZIP code or along a route in the United States. Enter a state to see a station count.



City of Elizabeth, NJ
Christian Bollwage Garage

Make Your Town Solar Friendly Action

Supportive Solar Zoning Ordinance

- 15 points
- Adopt Solar Zoning Ordinance
 - Purpose
 - Protect public health, safety, welfare
 - Reduce reliance on fossil fuels
 - Definitions
 - Rooftop, ground-mounted
 - Accessory use in all districts
 - Considerations
 - Historic districts
 - Tree commissions

Streamlined Permitting

- 15 points
- Post requirements online
- Train permitting, codes, and inspection staff
- PLUS one additional option:
 - Expedited permitting
 - Reasonable permitting fees
 - Offer narrow inspection timeframe
 - Eliminate zoning review



Community Led Solar Initiatives Action

Group Purchasing Program

- 10 points
- Group purchasing models
 - Sustainable Jersey Solar Challenge
 - Solarize campaign
 - Solarize campaign for businesses
 - Employer-based group purchase (employee benefits model)
- Performance based criteria
 - % of residents participating
 - % of businesses participating
 - % of employees participating
 - Overall kW installed per capita

Activities and Incentives

- 5 points
- Awareness building and outreach
 - local HOAs
 - financial institutions
 - Chamber of Commerce
 - realtors
- Incentives
 - ‘Solar ready’ checklist for builders
 - Solar access ordinance
 - Waive permitting fees
 - Utilize local workforce trainees
- Action/activity based criteria
 - Document outreach efforts
 - Level / types of incentives

Programs and Opportunities

- Sustainable Jersey Solar Challenge
- New Jersey Clean Energy Program Incentives



Sustainable Jersey Solar Challenge

- Community Based Outreach and Marketing Campaign
 - *Galloway, Highland Park, Hoboken, Hopewell, Maplewood, Verona, Woodbridge*
- EnergySage Online Solar Marketplace
 - User-friendly interface
 - Direct quotes from installers
 - Financing options and information
 - Solar 101 information for homeowners and businesses
- Friendly Competition
 - Sustainable Jersey Certification points
 - Award to municipality with highest adoption of solar

The screenshot shows the EnergySage Solar Marketplace interface. At the top, it says "Explore your solar options today!" and "Highland Park and EnergySage have partnered to help you go solar and save more money!". Below this is a banner image of a Highland Park sign with a "Highland Park Solar Program" logo. The main content area features a form to "Enter your zip code" and a "Get Started" button, with a note to "or start with an Instant Estimate of your solar savings".

How the EnergySage Marketplace Works

The EnergySage Marketplace gets you quotes online from multiple, pre-screened local installers and helps you compare offers in an apples-to-apples format so you get the best deal.

- Step 1: Register online**
Register and complete your property profile
- Step 2: Pre-screened installers submit quotes online**
Installers compete for your business
- Step 3: Compare quotes online**
Pick the best quote for you and save with solar!

[Learn more about the EnergySage Marketplace](#) | [Watch our 1 minute video](#)



Sustainable Jersey Solar Challenge

- Benefits of participating in the Solar Challenge:
 - Simple, cost-effective method to promote solar
 - Lowers cost and complexity for consumers
- Participating communities can:
 - Reduce their community carbon footprint
 - Become recognized leaders in local solar installations
 - Help residents save on utility bills
 - Make progress toward GOLD!



10 **Maplewood Is Green**
3 hrs · 🌐

Green Team members will be there to answer any questions about the program you have. If you want help signing up, bring your electric bill. Visit www.maplewoodsolar.org to learn more about the project.

**Have Questions?
Need help signing up?**

Question and Answer Session
Nov. 12th, 10:30-12 noon
Hilton Library
1688 Springfield Ave, Maplewood
It is helpful to bring a copy of your electric bill.

MPLWD GREEN  **Maplewood Solar Challenge**

Like Comment

For Further Information

- Visit Sustainable Jersey booths #101 and #103
- Visit the New Jersey Clean Energy Program booths
 - BPU booth # 1429
 - NJCEP booth # 1427





New Jersey's Clean Energy Program

Opportunities for Commercial, Industrial
and Institutional Buildings

Sustainable Jersey Energy – What's New – Gold?

Ashley Miller

November 17, 2016



NJCEP BACKGROUND



- Administered by the New Jersey Board of Public Utilities
- Funded from “Societal Benefits Charge” on most utility bills
- Program Goals:
 - Save energy and lower operating costs
 - Protect environment and lower GHG 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

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**



LOCAL GOVERNMENT
ENERGY AUDIT (LGEA)

LGEA: OVERVIEW



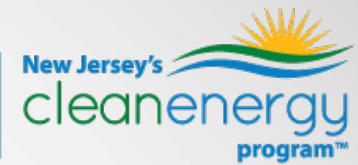
AVAILABLE TO

- Local governments & schools
- County colleges
- NJ State Colleges or State Universities
- 501(c)(3) Non-profit organizations
- State Contracting Agencies & Public Agencies

INCENTIVE

100% of the audit cost, subject to an annual incentive cap of \$100,000 per entity, per fiscal year. Exceptions possible (up to \$300,000).

LGEA: HOW IT WORKS



- Complete application (includes utility bills)
- Schedule your audit
- Choose among list of recommended, cost-effective energy efficiency upgrades
- Apply for additional incentives from *New Jersey's Clean Energy Program*

LGEA: NEW FEATURES



Revised program launched in March 2016:

- No RFP process for audit firm selection, single audit firm
- Ability to re-apply after 3 years
 - Measured from audit report approval date
- Consistency of audit report format/content
- Follow up re: NJCEP incentive programs and implementation of recommended measures



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 up to 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: BENEFITS



- Contractors assigned territories by County
- *Minimal cost*: Low upfront cost with generous incentives
- *Fast turnaround time*: Average length of time for job completion, 4-6 months
- *Ongoing savings*: Projects provide energy savings year after year
- Funding available from State Energy Program (SEP) for *municipal electric, oil and propane* customers.



DIRECT INSTALL: BENEFITS



New Feature of Program as of September, 2016:

- Customer can use their own contractor (provided they meet program requirements).
- See program web site for details and list of pre-selected contractors and territories.

NJCleanEnergy.com/DI

Energy Savings Improvement Program (ESIP)

- Program administered by BPU Staff directly
- Provides alternative financing options for energy savings projects
- Leverage value of energy savings to pay for cost of EE projects over a 15 year contract (in most cases)
- **Requires an audit as 1st step (LGEA satisfies requirement)**

Note: Not an NJCEP incentive program but visit NJCleanEnergy.com/ESIP for details

A woman with curly hair is smiling and looking at a young girl with a large afro hairstyle. They are standing next to a white refrigerator with a water dispenser. The woman is holding the refrigerator handle. The girl is also smiling and looking at the woman. The background is a plain white wall.

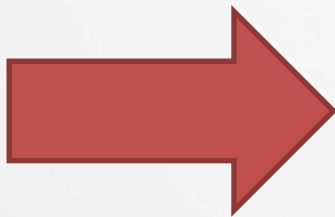
HOMEOWNER INCENTIVE PROGRAM



Homeowner Incentives



- Home Performance with ENERGY STAR®
 - Provides home energy assessments and comprehensive energy efficient upgrades
 - Incentives up to \$5,000
 - 0% interest loan up to \$10,000



Kimberly Hoff

Market Outreach Manager

Direct 732-218-3410 • Main 732-218-3400



Homeowner Incentives



- ENERGY Efficient Products Program
 - Rebates between \$50-\$300 when purchasing ENERGY STAR[®] certified refrigerators, washers and dryers
 - Discounted efficient lighting at participating retailers
 - Old, working refrigerators or freezers picked up free of charge, plus \$50 rebate
- HVAC programs offer incentives up to \$1,500 for heating and cooling equipment upgraded to highly efficient systems

SUSTAINABLE JERSEY

GOLD STANDARD - ENERGY



- Achieving a Gold Star in Energy by reducing Greenhouse Gas Emissions via:
 - Municipal Operations (reduce 3.6% per year)
 - Influencing the Community (reduce 1% per year)
- Recognizing the need for energy efficiency measures and implementing them is key to achieving a Gold Star.

Municipal Operations



- Progress is measured from a baseline year and may go as far back as 2006.
- Strategies for achieving the annual reduction can be accomplished by **1)** tracking energy use and **2)** implementing energy efficiency measures
- Incentives/funding options available via:
 - a) Direct Install
 - b) SmartStart Buildings (see NJCleanEnergy.com/SSB)
 - c) Energy Savings Improvement Program (ESIP)
 - d) Visit NJCEP website for additional incentive programs and offerings**

Influencing the Community



- Strategies for reaching 1% annual reduction may be accomplished by implementing four (4) existing Sustainable Jersey energy actions.
- Assistance towards this goal can be achieved via:
 - a) Outreach to local businesses: Direct Install
 - b) Outreach to residents: Home Performance with ENERGY STAR®

Township of West Windsor



- **2011 & 2012** – Installed energy efficiency measures in 4 facilities (Direct Install)
- **2013** – Completed LGEA for 9 facilities
- **2015** – Installed energy efficiency measures in 3 of 4 facilities previously upgraded (Direct Install)
- **October 2016** – Eligible for re-enrollment in LGEA, if applicable.



Visit Us at
Booth 1427 & 1429



FOR MORE INFORMATION

Visit NJCleanEnergy.com

Call (866) NJSMART

Stay Informed NJCleanEnergy.com/Newsletter

To join the Energy Efficiency listserv
contact the [NJCEP Webmaster](#).

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