Commit Your Town to Climate Progress: Go for the Sustainable Jersey Gold Star in Energy

Sustainable Jersey Webinar
June 28, 2017
Speakers

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Sustainability Institute at TCNJ
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.
STATEWIDE REDUCTIONS REQUIRED BY GLOBAL WARMING RESPONSE ACT

3.6% ANNUAL RATE OF GHG REDUCTION

GHG in Metric Tons

YEAR

2006 2010 2014 2018 2022 2026 2030 2034 2038 2042 2048 2050
NJ Performance 2006-2014: Actual vs. Target Emissions (MM Tons of CO$_2$)

- Y-axis: MMTCO2E (Million Metric Tons of CO2 Emissions)
- X-axis: Year (2006-2014)

Graph shows the comparison between actual emissions (orange line) and the 2050 goal (blue line) from 2006 to 2014.
REDUCTIONS REQUIRED FOR GOLD STAR IN ENERGY

1.0% ANNUAL RATE OF GHG REDUCTION FROM COMMUNITY-WIDE EMISSIONS

3.6% ANNUAL RATE OF GHG REDUCTION FROM MUNICIPAL OPERATIONS

GHG Percentage (Base year 2006)

YEAR

2006 2010 2014 2018 2022 2026 2030 2034 2038 2042 2046 2050
The Gold Star in Energy

2 Municipal Roles, 2 Municipal Standards, 2 Gold Actions:

1. Municipal operations and facilities: Buildings, exterior lighting, fleets

2. Influencing the community: Taking effective action to lower community-wide greenhouse gas (GHG) emissions
Before you apply...

Currently Silver certified OR applying for Silver certification

Apply for the Gold Star Standard in Energy and/or Waste
Gold Star Standards

A new level of recognition for Sustainable Jersey silver certified communities.

Silver certified municipalities are eligible to earn Gold Star recognition for achieving high levels of performance in key dimensions of sustainability. The levels of performance flow from our assessment of what we need to achieve as individual communities, and as a State, as defined in the Sustainable State of the State Report. Achieving these goals will rely on action at many scales and across boundaries, and the Gold Star Standards define the role that municipal governments must play to achieve success.

Gold Stars will be awarded one dimension of sustainability at a time. The first Sustainable Jersey Gold Star Standards focus on Energy and Waste. Energy and Waste are fundamental dimensions of sustainability for which there are widely accepted metrics of performance supported by readily available quantitative data. Over time, new Gold Star Standards in additional dimensions will be developed and released.

See the overview of the Gold Star Standard in Energy and the Gold Star Standard in Waste for more details regarding the components of each standard.

http://www.sustainablejersey.com/actions-certification/gold-star-standards/
Accessing Your Gold Star Application

- Sign in to Sustainable Jersey website
- Access the Gold Star application via the Municipal Dashboard
- Click “Begin Gold Star Application”
Gold Star Application

- Same look and feel as the certification application
- Same action statuses
- “Help” area contains overview of Gold Star standards
- Overview documents available
- Submit button is yellow and always clickable

NOTE: All Gold Star actions within at least one Gold Star category (Energy/Waste) must be marked **completed** to submit
Gold Star Standard: Municipal Operations

What to submit:

1. Describe municipal strategies – What did you do to lower emissions from municipal operations by average 3.6% per year?

2. Prove that you did it. Upload:
   - Municipal carbon footprint for selected base year.
   - Municipal carbon footprint for the most recent calendar year for which data are available.
## Strategies for Getting to Gold

### Municipal Operations: GHG Reduction Strategies and Goal

<table>
<thead>
<tr>
<th>Strategies and Actions to Achieve Gold</th>
<th>Time to Implement</th>
<th>Impact on Municipal GHG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Renewable Energy Generation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Site Solar System</td>
<td>1-2 years</td>
<td>1-35%</td>
</tr>
<tr>
<td>On-Site Wind System</td>
<td>3-5 years</td>
<td>&lt;1%</td>
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<tr>
<td>Geothermal System</td>
<td>2-3 years</td>
<td>3%</td>
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<tr>
<td><strong>Greening the Municipal Fleet</strong></td>
<td></td>
<td></td>
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<tr>
<td>Purchase Alternative Fuel or Efficient Vehicles</td>
<td>3-7 years</td>
<td>4%</td>
</tr>
<tr>
<td>Convert Vehicles to Alternative Fuel</td>
<td>1 year</td>
<td>2%</td>
</tr>
<tr>
<td>Trip Optimization Software</td>
<td>1 Year</td>
<td>3-6%</td>
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<tr>
<td>Proper Vehicle Maintenance</td>
<td>1 Year</td>
<td>6%</td>
</tr>
<tr>
<td>Driver Training</td>
<td>1 year</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Buildings and Street Lighting Efficiency</strong></td>
<td></td>
<td></td>
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<tr>
<td>Implement Energy Efficiency Measures</td>
<td>2-4 years</td>
<td>10-17%</td>
</tr>
<tr>
<td>Energy Tracking &amp; Management</td>
<td>1 year</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Estimated Impact from Reduction Strategies</strong></td>
<td></td>
<td><strong>31-75%</strong></td>
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</table>
## Community-Wide GHG Emissions: Reduction Strategies and Goal

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<tr>
<td><strong>Renewable Energy Generation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Purchase of Green Energy (Aggregation)</td>
<td>1-2 years</td>
<td>4-7%</td>
</tr>
<tr>
<td>Community-led Solar Initiatives</td>
<td>1-2 years</td>
<td>2-4%</td>
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<tr>
<td><strong>Mobile Sources (vehicles)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Alternative Fuel Vehicle (AFV) Refueling Station</td>
<td>1 year</td>
<td>5-10%</td>
</tr>
<tr>
<td>AFV Infrastructure Permitting and Zoning</td>
<td>1-2 years</td>
<td></td>
</tr>
<tr>
<td>Development Patterns/Intensity</td>
<td>5-10 years</td>
<td>5-8%</td>
</tr>
<tr>
<td>Promoting Walking and Bicycling</td>
<td>2-10 years</td>
<td></td>
</tr>
<tr>
<td><strong>Building Energy Efficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial Sector Outreach (Direct Install)</td>
<td>1-2 years</td>
<td>≈1%</td>
</tr>
<tr>
<td>Outreach to Residents (Home Performance w/Energy Star)</td>
<td>1-2 years</td>
<td>≈1%</td>
</tr>
<tr>
<td>Tree Canopy (Shading Effect)</td>
<td>1-10 years</td>
<td>1-2%</td>
</tr>
</tbody>
</table>

**Estimated Impact from Reduction Strategies**: 19-33%
Gold Star Standard: Community Emissions

Lower community-wide GHG through six actions:

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

• ALTERNATE PATH: meet 1% annual reduction by substituting *pre-approved*, effective actions (e.g., R-GEA)
Make Your Town Solar Friendly Action

Supportive Solar Zoning Ordinance

- Adopt Solar Zoning Ordinance
- Amend Permitting Fee Ordinance

Note: Solsmart Silver designation qualifies for 30 points for this action

Streamlined Permitting

- Post requirements online
- TWO additional activities:
  - Train first responders
  - Cross-train codes and permitting staff
  - Expedited permitting
  - Offer narrow inspection timeframe
  - Expedite or eliminate zoning review
Community Led Solar Initiatives Action

Group Purchasing Program

- Group purchasing models
  - Sustainable Jersey Solar Challenge
  - Solarize campaign
  - Solarize campaign for businesses

- Performance based criteria
  - % of residents participating
  - % of businesses participating
  - Overall kW installed per capita

Activities and Incentives

- Awareness building and outreach
  - Financial institutions
  - Chamber of Commerce
  - Realtors

- Incentives
  - ‘Solar ready’ checklist for builders
  - Waive permitting fees
  - Utilize local workforce trainees
Make Your Town Electric Vehicle Friendly Action

• Purpose: facilitate adoption of EV by consumers

• Required activities
  – Zoning ordinance -- EV charging stations as accessory use
  – Ordinance -- design standards for EVSE parking spaces
  – Training for local officials

• Outreach activities (must do ONE)
  – 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

Drive Electric
National Drive Electric Week
Public EV Charging Infrastructure Action

• Purpose: Helps address ‘range anxiety’

• Required elements
  – **Municipality instrumental** in the project
  – **Publicly** available
  – Listed on “public directory”
  – Signage/Promotion of Charging Stations

• Charging station may be:
  – Located on private property
  – Owned and operated by a local nonprofit
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)
Commercial Energy Efficiency Outreach

- Green team partners with municipal officials to complete targeted outreach program to local businesses for the Direct Install program.
Pathways to Gold Star in Energy

Sample Town A
- Municipal Carbon Footprint
- Plus six required actions
  - Make Your Town Solar Friendly
  - Community Led Solar Initiatives
  - Make Your Town Electric Vehicle Friendly
  - Public Electric Vehicle Charging Infrastructure
  - Residential Energy Efficiency
  - Commercial Energy Efficiency

Sample Town B
- Municipal Carbon Footprint
- Provides robust data to demonstrate GHG reductions of 1% per year for 3 years
- Substitute *preapproved* activities, for example:
  - Renewable Government Energy Aggregation
  - EV Challenge
Community Choice Aggregation (CCA) is a municipal energy procurement model that replaces the utility as the default supplier of electricity for virtually all homes and small businesses within a community.

It offers the following benefits:

- Secure lower energy prices locally
- Exercise more local control over energy resources
- Increase the percentage of renewables in the fuel mix
- In New Jersey, this model is known as Government Energy Aggregation (GEA)
Renewable Government Energy Aggregation

• RGEA is a Sustainable Jersey action that utilizes the CCA model to spur adoption of cleaner energy in New Jersey.

  ➢ Action gives points on a sliding scale depending on the percentage of energy from renewable sources in the default package

  ➢ Law currently requires 15.985% of NJ energy from renewable content

  ➢ Our research is based on an RGEA with 40% renewable content

  ➢ To date, no NJ municipality has adopted a CCA that has a renewable content above the existing renewable portfolio standard as its default package
Renewable Government Energy Aggregation

However, a successful example exists just to our north in Westchester County, NY (2016).

- 20 municipalities representing 40% of the county’s population are participating
- CCA Basic Supply package saves 9.1% on electricity over basic tariff rate
- CCA Renewable Package saves 5.7% on electricity over basic tariff rate
- 70,000 of the 110,000 residential customers in Westchester County chose the 100% renewable energy option
- **15% GHG reduction as a result of this program**
Based on a historic participation rate of 90+%, we estimate that a municipality in New Jersey could reduce their carbon emissions profile by 6 – 9% by implementing the RGEA action.
Electric Vehicles – Potential for Emissions Reductions

GHG Emissions Savings from Gasoline to:

- Hybrid: 45%
- Plug-in hybrid: 56%
- All electric: 76%

Source: [https://www.afdc.energy.gov/vehicles/electric_emissions.php](https://www.afdc.energy.gov/vehicles/electric_emissions.php)
Electric Vehicles in NJ

Electric Vehicle Registrations in New Jersey
2012 - 2016

Source: NJDEP Presentation at 2017 Sustainability Summit
EV Group Purchase Program

• Community-Led Outreach Campaign
• Engage local auto dealerships for:
  – Discount pricing
  – Limited duration
• Increase support for EV Friendly policies and Public EV Charging Infrastructure
• Can be paired with Solar Group Purchase Program

Source: Refuel Colorado.
EV Group Purchase Program Outcomes

- **Northern Colorado**
  - 300% increase in EV sales
    - 15 EVs sold in 2014
    - 59 EVs sold in 2015

- **Boulder, Colorado**
  - 230% increase in EV sales
    - 52 EVs sold in 2014
    - 173 EVs sold in 2015

- **Price break offered:**
  - $8,500 dealer discount

- **Plus tax credits:**
  - $7,500 federal tax credit
  - Colorado tax credit

Going for Gold!

• It’s needed!
  – Gold Star in Energy demonstrates commitment to reducing GHG emissions in time to stabilize climate

• It’s feasible!
  – Meeting 2 Gold Star Standards gets needed reductions using known strategies:
    o For municipal operations
    o For community-wide emissions

• Sustainable Jersey staff are here to help!
  – Contact us *(soon!)*
Thank You!

If your town is contemplating going for a Gold Star in Energy, or for further information, contact:

- Melanie McDermott, Senior Researcher
  - Email: mcdermom@tcnj.edu
  - Phone: 609.771.2836

- 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
Upcoming Partner Events

NJ ELECTRIC SCHOOL BUS WORKSHOP

18 JULY 2017
FROM 9 AM - 2 PM
NJPSA FEA Conference Center
12 Centre Drive
Monroe Township, NJ 08831

This free one-day workshop will present lessons from the field to educate decision makers on electric school bus technology, funding, procurement & best practices for deployment. Registration is free and includes lunch.

RSVP ONLINE
HTTP://BIT.LY/EBUSNJ

Event co-hosted by Sustainable Jersey, NJ Clean Cities Coalition, & the Vermont Energy Investment Corporation. Funding provided by the NY Community Trust.
The Art of Sustainability: Creative Placemaking and Your Community  
JULY 26, 2017 - 1:00 PM TO 2:00 PM  
ONLINE

REGISTER

This webinar will provide an overview of all of the arts and creative culture actions in the Sustainable Jersey program, and will focus on the newest action, Municipal Commitments to Arts and Creative Culture. This action rewards municipalities for building a more welcoming environment for artistic and cultural activity through land use ordinances and other regulations, contractual relationships with cultural organizations, municipal ownership of spaces reserved for cultural and creative activities, tax abatements that help creative people to live or work in the community, and art-specific strategies in the municipality’s Master Plan.

Speakers will talk about how they have utilized their creative assets to make their communities more vibrant, both economically and artistically.
Helping Your Local Businesses Be More Sustainable (Webinar)
September 13, 2017 – 1:00 PM TO 2:00 PM
REGISTER

Community efforts toward sustainability cannot be successful without the active engagement of the private sector. The NJ Sustainable Business Registry Program, developed by the NJ Small Business Development Centers in partnership with the NJ Department of Environmental Protection, is an online registry where businesses can receive tips and resources to become more sustainable.

Learn about Sustainable Jersey's Green Business Recognition Program action that awards points to municipalities that promote and encourage the adoption of this program by its businesses. Hear about the Registry and what Sustainable Jersey communities have done to promote sustainability to their local businesses.
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