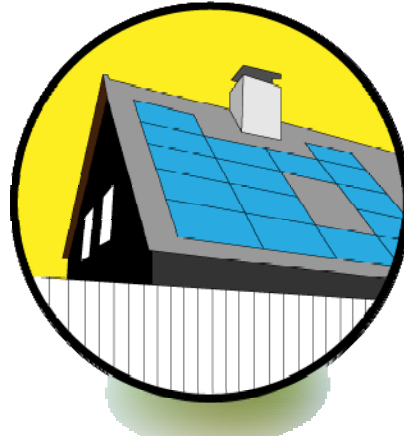
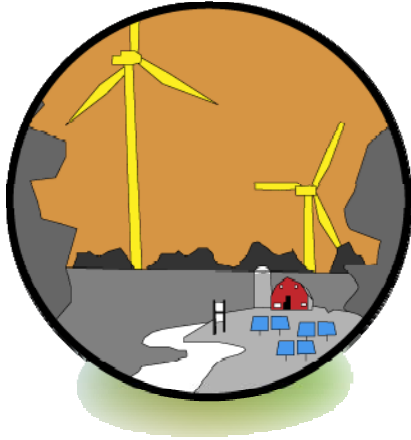


# Municipal Energy Planning “Made Easy”



An Independent Contractor to:



## What We'll Discuss

- The CNY RPDB
- What is the Opportunity?
- Existing Facilities
  - Pre-Qualified vs. Performance-Based Incentives
  - Industrial Process (WWTPs)
  - NYSERDA vs. Utility Programs
- New Construction Projects
  - Incentives
- Renewable Energy Projects
- Unique Funding Opportunities

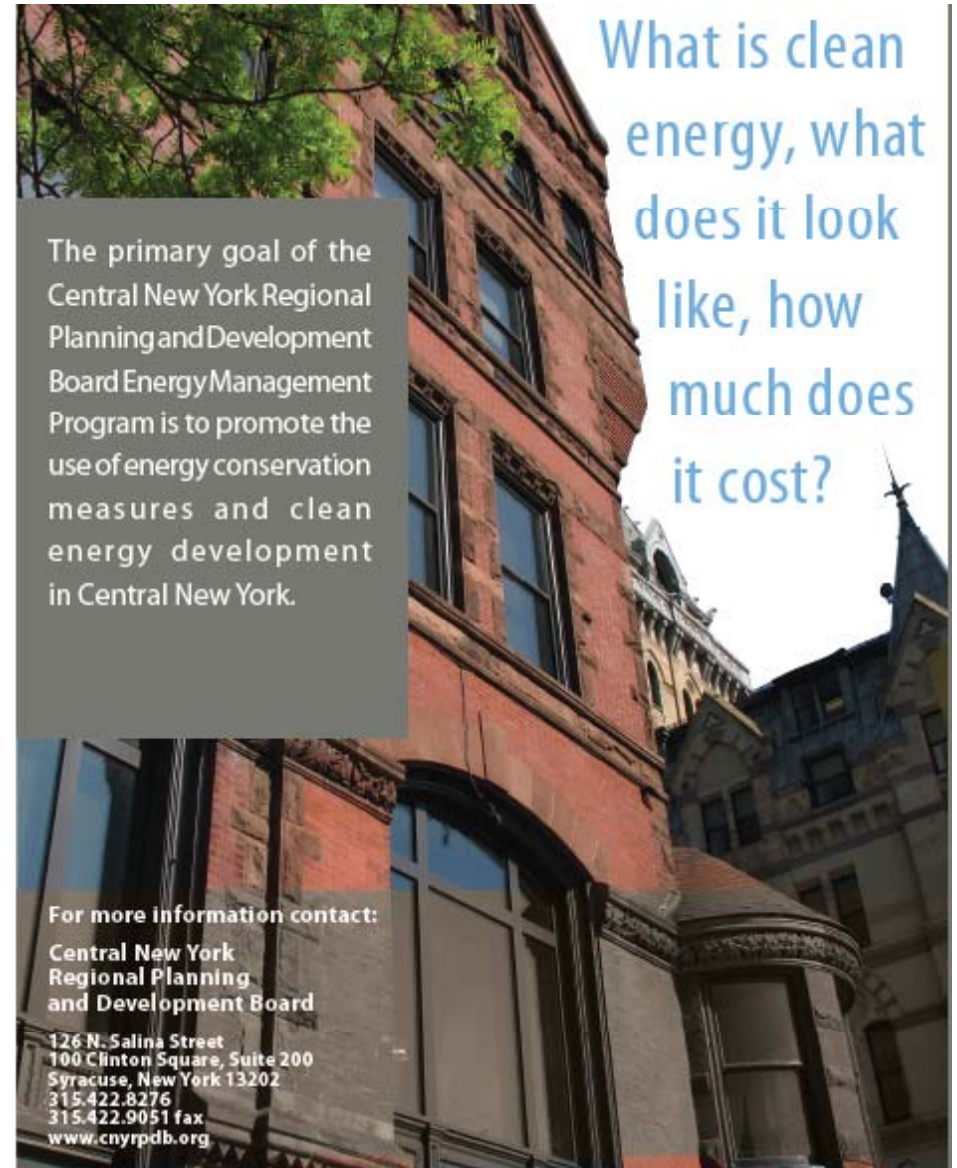


An Independent Contractor to:





- A public agency established in 1966 that serves Cayuga, Cortland, Madison, Onondaga, and Oswego Counties
- Provides a range of services associated with the growth and development of CNY communities with a focus on:
  - Comprehensive Planning
  - Economic Development
  - Environmental Management
  - Transportation Planning
  - Information and Research Services
  - **Energy Management**
- Regional Outreach Coordinator for NYSERDA programs including **EDGE** and **Climate Smart Communities**



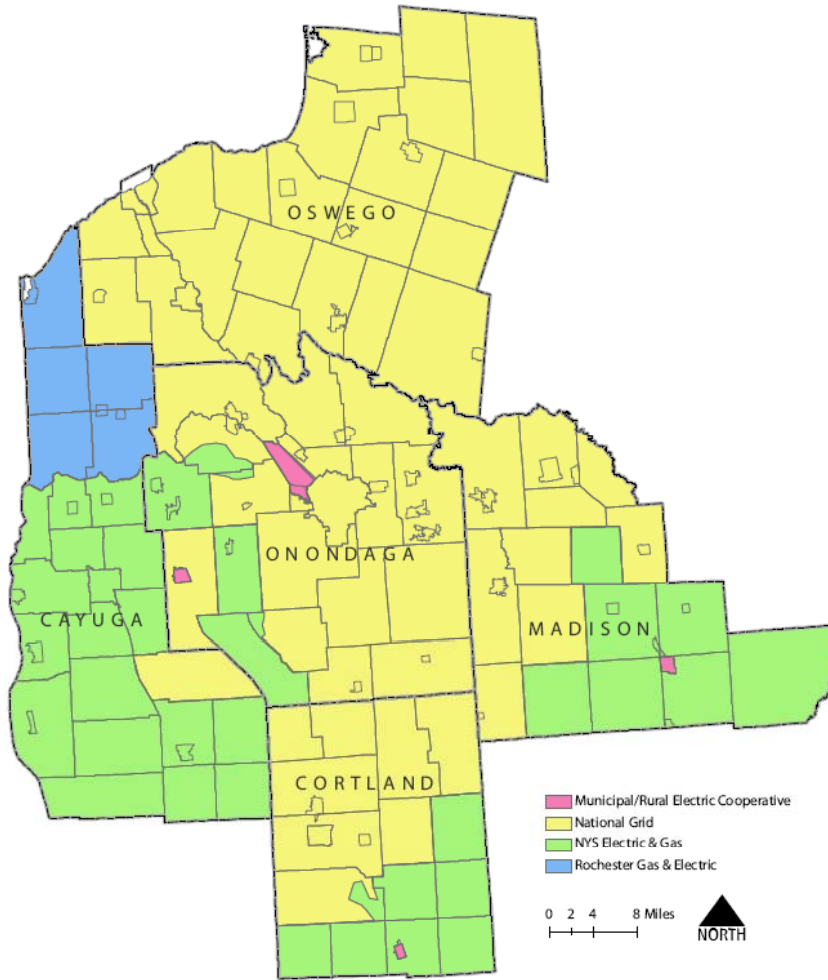
An Independent Contractor to:



# What is the Opportunity?

- Buildings account for over 40% of total energy use and over 70% of electricity use in the United States.
- The commercial and industrial sectors account for 32% of the net energy consumption in New York State.
- Energy use is the single largest operating expense in commercial office buildings, representing approximately 1/3 of typical operating budgets and accounting for almost 20% of the nation's annual GHG emissions.
- Energy costs are typically the second highest line item for a municipal budget, after personnel-related expenses.
- Energy costs for **WWTP facilities and water delivery** are typically the second highest expenditure after transportation.
- **Streetlights and traffic signals** typically account for 5-10% or more of a municipality's energy expenditures.

# The CNY Region



An Independent Contractor to:



## Grants, Tools and Resources

US DOE, US EPA, USDA, etc.

NYSERDA, NYS DEC, NYS DOS, NYS DOT, NYS EFC, etc.

NYPA

Utility

**CNY RPDB can provide free assistance to access any of these!**

- Public Benefit Corporation
- Established by the New York State Legislature in 1975
- NYSERDA is tasked to address the State's energy & environmental challenges



## Mission

Advance innovative energy solutions in ways that improve New York's economy and environment.

# Energy Efficiency Programs

## Existing Buildings

- FlexTech Program
- Existing Facilities Program

## New Buildings

- New Construction Program



An Independent Contractor to:





Project  
Identification/  
Energy Study



Project  
Implementation

### Phase 1: FlexTech

- Identify the changes you could make

### Phase 2: Implementation Incentives

- Making the changes  
– Existing Facilities Program

## Objective:

To help customers make informed energy decisions

### Eligible applicants include:

- State and local governments
- Public and private K-12 schools
- Not-for-profit and private institutions
- Colleges and universities
- Health care facilities
- Industrial and commercial facilities

An Independent Contractor to:



## Objective:

To help customers make informed energy decisions

## Provides:

- Experienced, Unbiased Energy Guidance
  - ✓ NYSERDA pre-qualified consultant or your own
- Study Development and Management
- 50/50 Cost Share Services up to \$1 million or 10% of energy bills

An Independent Contractor to:



## Project Categories:

- General Feasibility Studies
- Retrocommissioning
- Long-Term Energy Management and Master Planning
- Data Center Efficiency
- Peak Load Management Strategies
- Energy Procurement
- Combined Heat and Power
- Performance Contract Evaluation and RFP Assistance

## The Process:

- Customer chooses from **FlexTech Consultant List** or uses their own consultant.
- NYSERDA Project Manager & Consultant **Site Visit**
- Develop **Scope of Work** (site-specific, customized proposal)
- NYSERDA issues **Final Report** to customer
- Close out **Meeting**

**Project  
Identification/  
Energy Study**



**Project  
Implementation**

**Phase 1: FlexTech**

- Identify the changes you could make

**Phase 2: Implementation Incentives**

- Making the changes
  - Existing Facilities Program

# Provides capital-cost incentives for implementation projects

- Pre-Qualified Incentives
- Performance-Based Incentives

Existing Buildings:  
Pre-Qualified  
Incentives

- Small-scale projects
  - Electric equipment: \$30,000 cap
  - Gas equipment: \$30,000 cap
- Applicants can receive incentives (\$/unit) for pre-qualified equipment/systems
- Easy participation process:
  - Check efficiency requirements to determine eligible equipment.
  - Apply within 90 days of project purchase and installation.
  - NYSERDA will review for eligibility and provide payment.



Existing Buildings:  
Pre-Qualified  
Incentives

Pre-Qualified Incentives are available for:

- Lighting
- HVAC
- Chillers
- Motors
- VFDs
- Refrigeration
- Commercial Kitchen Equipment
- Interval Meters
- Boilers/Furnaces
- Water & Space Heating

An Independent Contractor to:



## Provides capital-cost incentives for implementation projects

- Pre-Qualified Incentives
- Performance-Based Incentives

Existing Buildings:  
Performance-Based  
Incentives

- **Large-scale and/or custom projects**
- **Project Categories:**
  - Electric Efficiency
  - Gas Efficiency
  - Demand Response
  - Combined Heat & Power
  - Monitoring-Based Commissioning
  - Industrial Process & Efficiency (Data Centers)
- **Incentive is paid based on the energy savings**
- **Minimum Incentive: \$30,000 (at least 250,000 kWh per year in savings)**

- **Engineering analysis required**
- **Pre- and post-installation site visits**
  - Performed by NYSERDA technical consultants
- **Incentive payment after savings verified**

An Independent Contractor to:



# Monitoring-Based Commissioning

- Offsets materials and engineering costs associated with upgrading energy data collection hardware and cost of energy management services needed to achieve energy savings
- Requires 5-year continuous commissioning plan
- Two-year measurement & verification period

Existing Buildings

Project Category	Upstate incentives	Downstate Incentives	Maximum Incentive Per Facility
Electric Efficiency	\$0.12/kWh	\$0.16/kWh	\$2,000,000
Natural Gas Efficiency	\$300/kW	\$600/kW	\$200,000
Demand Response	\$100/kW	\$200/kW	\$2,000,000
Industrial Process & Efficiency (Data Centers)	\$0.12/kWh \$15/MMBtu	\$0.16/kWh \$20/MMBtu	\$5,000,000
Combined Heat & Power	\$0.10/kWh + \$600/kW	\$0.10/kWh + \$750/kW	\$2,000,000
Monitoring-Based Commissioning	\$0.05/kWh	\$0.05/kWh	\$500,000

An Independent Contractor to:



## NYSERDA vs. the Utility

**System Benefits Charge (SBC):** consumption-based charge on customers electric and/or gas utility bills.



Central Hudson Gas & Electric  
Con Edison

New York State Electric & Gas

**National Grid**

Orange and Rockland

Rochester Gas and Electric

An Independent Contractor to:

**nyserda**  
Energy. Innovation. Solutions.

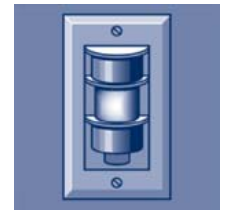
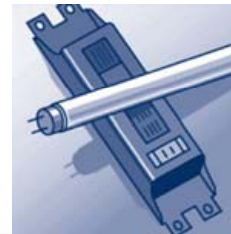
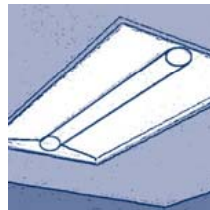
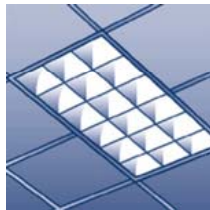
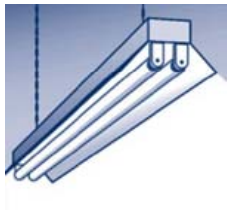


Central New York  
**cip** climate change  
innovation program

Central NEW YORK  
**energy**  
CHALLENGE 

## NYSERDA or the Utility

- **National Grid:**
  - Up to 70% of the installation and equipment costs
  - On Bill Financing Available
  - Lump sum discount of 15% (Total 85%)
  - Interest-free financing for up to 24 months
- **NYSERDA:**
  - Prequalified Lighting products (Consortium for Energy Efficiency)
  - LED Lighting Incentives (Design Light Consortium)

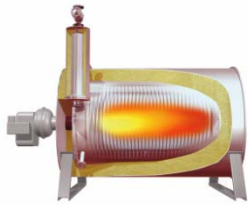




# NYSERDA or the Utility

## Utility

- Furnaces
- Condensing Unit Heaters
- Infrared heaters
- Steam Boilers
- Hydronic Boilers
- Condensing Boilers
- Indirect Fired Water Heaters
- Integrated Water Heater/ Non-Condensing Boiler



## NYSERDA

- PTAC and PTHP Equipment
- Unitary HVAC and Split Air Systems
- Air-to-Air Heat Pump Systems
- Water Source Heat Pump Systems
- Differential Enthalpy Economizer Controls
- Demand Control Ventilation Sensors

An Independent Contractor to:



## Objective:

**Transform the way buildings are designed and built**

- ✓ **Technical Assistance**
- ✓ **Green Buildings Services**
- ✓ **Bonus Incentives for LEED Certification**
- ✓ **Capital Cost Incentives**

**Note: Baseline is ASHRAE 90.1-2007 for commercial buildings (NYS Energy Code)**

An Independent Contractor to:



# Two types of building projects are eligible:

New Construction

Substantial Renovation (“gut rehab” or vacant 30-days)

## Technical Assistance

NYSERDA pays the **first \$5,000** of the cost of **TA services** and cost shares up to **50 percent** of the balance, up to a **maximum of \$75,000**.

For **green building technical services** on projects that achieve **LEED®** NYSERDA will pay an additional amount equal to NYSERDA's share of TA services, up to a total additional **\$25,000**.

For projects that **successfully achieve a formal LEED®** rating by the US GBC applicants are eligible for a flat-rate incentive in the amount of **\$5,000 for projects under 50,000 square feet** in area and **\$10,000 for projects of 50,000 square feet or larger**.

Performance-Based Assistance

Existing Facilities

Task	Incentive
Electric Efficiency	\$0.12/kWh
Energy Storage	\$300/kW
Natural Gas	\$15/MMBtu
Demand Response	\$100/kW
Commissioning	\$0.05/kWh

New Construction

Task	Incentive
Electric Efficiency*	\$0.11- \$0.16/kWh
Technical Assistance	First \$50k + 50%
Natural Gas	\$15/MMBtu
Summer Peak*	\$230- \$280/kW
Commissioning	10% up to \$25k
LEED Certification**	\$5k-\$10k

\*Determined by design against baseline

\*\* ≥ 50,000 sq.ft.

## Consolidated Funding Application (CFA)

As part of Governor Cuomo’s transformative plan to improve the state’s economic development model, a New York State Consolidated Funding Application (CFA) has been created that will streamline and expedite the grant application process.

Customers seeking funding in select NYSERDA programs must apply through the CFA.

<http://nyworks.ny.gov/>



## Preble Town Hall

### Lesson:

Projects can take advantage of incentives from **both agencies** for **different measures** based on customer and objectives.

### Renovation Project Description:

- (2) 3 Ton Heat Pumps
- (1) 2.5 Ton Heat Pump
- Insulation and Air Sealing
- 12 New Windows
- 20 Light Retrofit
- 9.36kW Solar PV System



An Independent Contractor to:



**Outcomes:**

- Over \$7,000 annual savings
- 1877 gallons fuel oil saved
- Approx 9,000kW annual renewable energy generated
- Reduced emissions by 390.6 MTCO<sub>2</sub>e over 20 years



**Incentives:**

- NYSERDA (x2)
- National Grid
- NYS Senate
- CNY RPDB

**40% TPC**



An Independent Contractor to:



## City of Cortland WWTP

### City of Cortland WWTP

- Turbo Blower Process Improvement
- 996,000kWh/year to 464,000kWh/year
- Over \$55k Annual Savings



Lesson: Municipal Operations Offer Large Opportunities

Note: IPE can handle process and building improvements.

An Independent Contractor to:

**nyserda**  
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innovation program

Central NEW YORK  
**energy**  
CHALLENGE 



Public Lighting

Syracuse

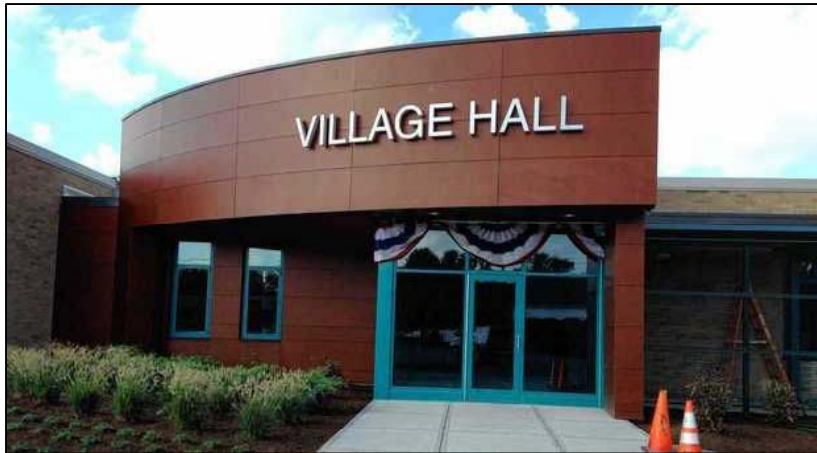
Baldwinsville



Auburn



## Unique Funding Opportunities



### Skaneateles Village Hall

- 216 Solar Photovoltaic Panels
- Solar Tubes
- LED Lighting
- Geothermal Heat Pump HVAC
- Upgraded Roof and Wall Insulation



### Highlights:

- Net Zero Energy
- Half of the energy use compared to code building
- Adaptive reuse of a building “on the demo list”
- Avoidance of 46 metric tons of GHG emissions annually
- **First net zero municipal building in NYS!**

An Independent Contractor to:



# NYSERDA Solar PV Program Changes

## Old Funding Limits

Residential: 12kW  
Commercial: 50kW  
  
\*\*NY SUN: 200kW+

- \$1.40/ watt incentive



## New Funding Limits

Residential: 25kW  
Commercial: 200kW\*  
  
\*\*NY SUN: 200kW+

- \$1.00/watt incentive first 50kW of installed capacity per meter.
- \$0.60/watt incentive for installed capacity over 50kW and up to 200kW per meter.

\*\* Selected based on their incentive bid in dollars per kilowatt hour (\$/kWh)

## Other Renewable Energy Systems

- Solar Thermal- \$1.50/kWh PON 2149
- Fuel Cell- Up to \$1 million- PON 2157
- On Site Wind- \$3.50/kWh- PON 2439
- CHP (Natural Gas-Fired)
  - PON 2568 for pre-qualified systems between 50 kW to 1.3 MW
  - PON 2701 for systems greater than 1.3 MW (up to lesser of 50% of total cost or \$2 million)
  - 10% bonus incentive for projects serving Critical Infrastructure including Facilities of Refuge (up to \$2.6 million)

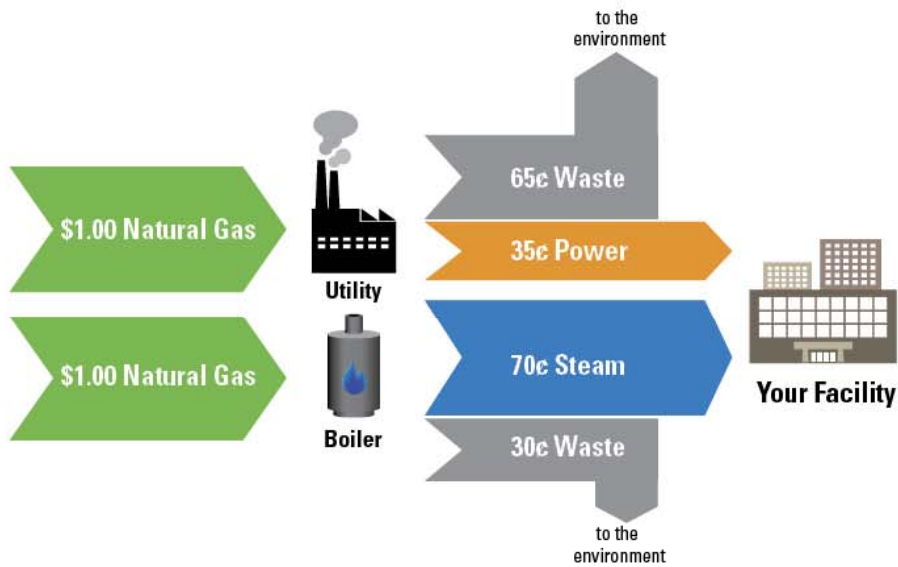


An Independent Contractor to:



# Combined Heat and Power

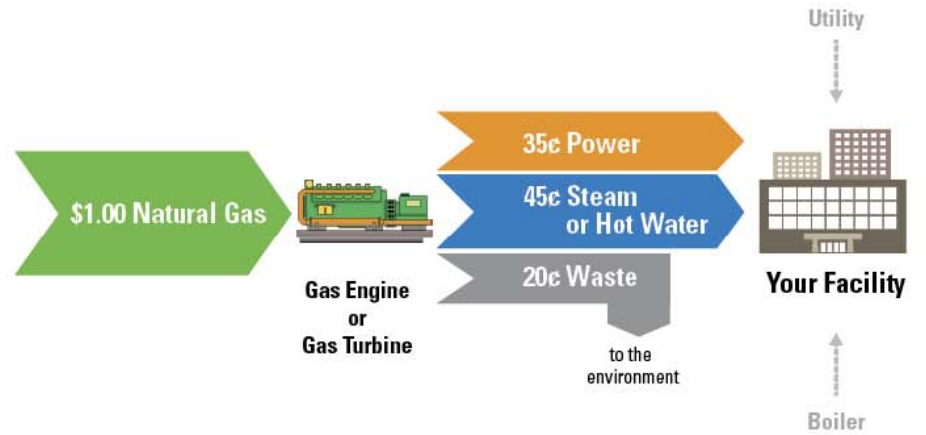
## Traditional Generation



Investment	\$1.00
Useable Energy	\$ .50
Waste	\$ .50

**50% EFFICIENT**

## Cogeneration



Investment	\$1.00
Useable Energy	\$ .80
Waste	\$ .20

**80% EFFICIENT**

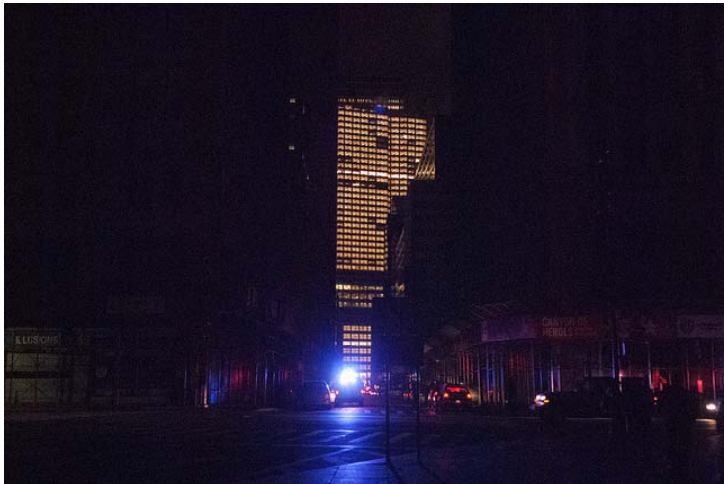
An Independent Contractor to:



Combined Heat and Power



St. Joseph's Hospital, Syracuse



# Leverage Existing Regional Initiatives

## Save the Rain



**SUSTAINABLE DEVELOPMENT PLAN**



## Creating Regional Sustainability Plans

- Provided nearly \$10 million to help the 10 regions create comprehensive sustainability plans. Planning teams were led by a municipality (county, city, town, village, Indian tribe or nation within New York State), acting on behalf of a consortium of other municipalities located in one of the 10 regions.
- Each region adopted sustainability plans that reflect the needs of its residents including:
  - Current greenhouse gas emissions
  - Energy use
  - Available natural resources
  - Economic assets, liabilities, and opportunities
  - Set sustainability targets
  - Short and long-term actions





**visioncny**

**Central New York  
Regional Sustainability Plan**

June 2013

CLEANER GREENER COMMUNITIES NY WORKS

Central New York Regional Planning and Development Board

An Independent Contractor to:



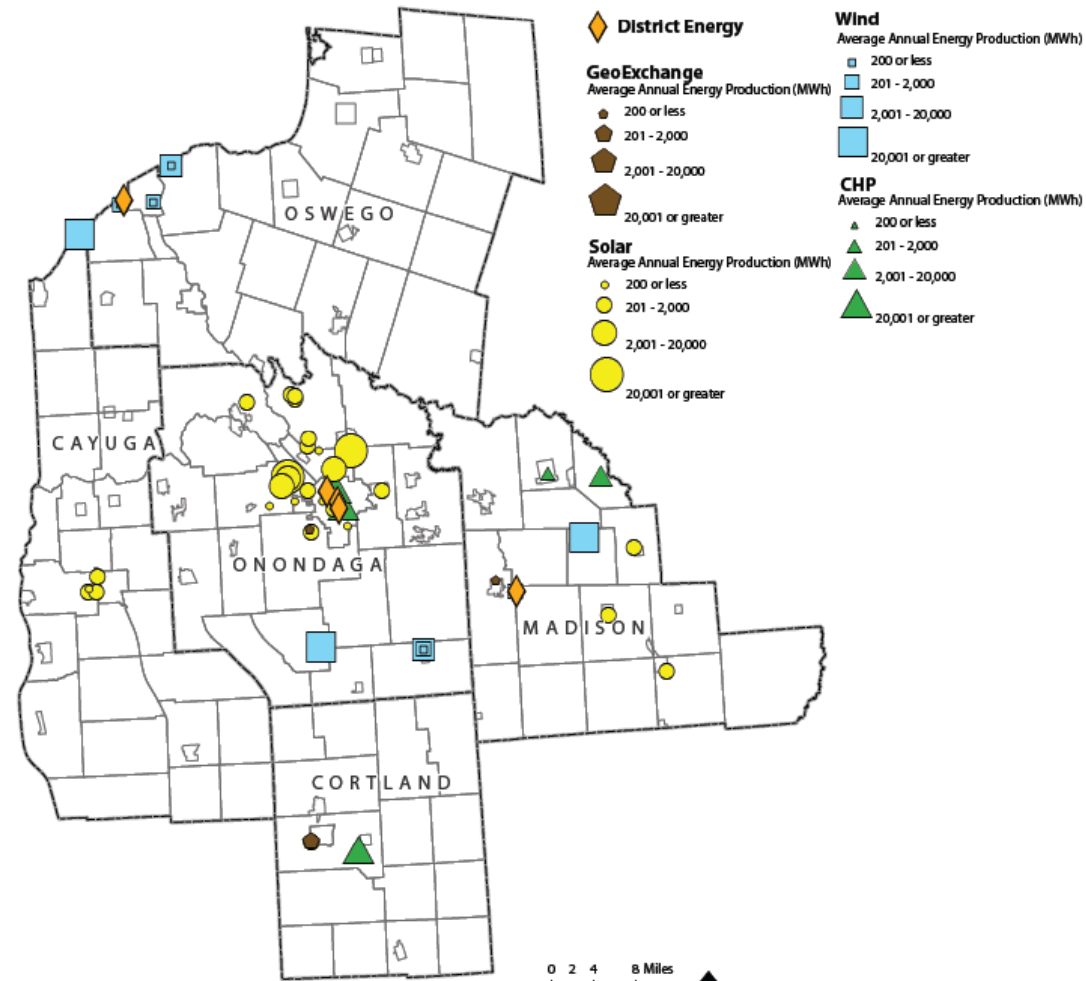
- Three rounds of funding with a total of **\$90 million**
- **Round I: \$30 Million Available- closed August 12, 2013**
- Implementation of innovative, community-based projects that
  - Reduce current greenhouse-gas emissions
  - Create more resilient, sustainable communities,
  - Position New York State to prepare for a cleaner future.

Additionally, funding is available for local communities to:

- Create or revise comprehensive plans
- Adopt streamlined permitting and other ordinances for PV systems and electric vehicle charging stations



# VisionCNY Identified Project Opportunities



An Independent Contractor to:





**Hancock International Airport**



**MWB Reservoir, Town of Clay**



- **Partnership between New York State and local governments**
- **Resources and services to:**
  - Reduce greenhouse gas emissions
  - Save taxpayer dollars
  - Advance community goals for health and safety, economic vitality, energy independence and quality of life

**The CNYRPDB serves as the Climate Smart Community Coordinator for Cayuga, Cortland, Madison, Onondaga and Oswego counties**

- ✓ GHG Inventory
- ✓ Climate Action Plan
- ✓ Demonstration Projects
- ✓ Community Education and Outreach

## CNY RPDB Services to Climate Smart Communities

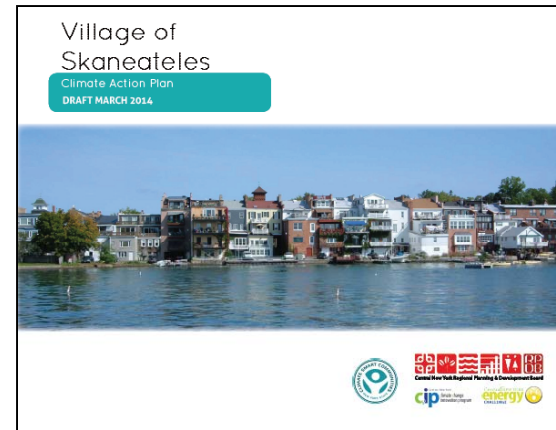


Figure 2- Skaneateles Municipal Emissions by Sector MTCO<sub>2</sub>e (2010 Baseline)

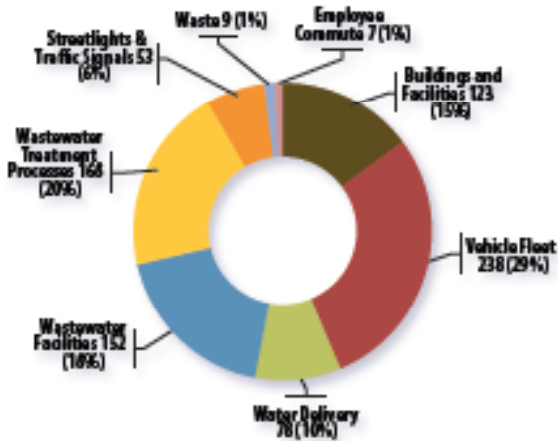


Figure 3- Skaneateles Community Emissions by Sector MTCO<sub>2</sub>e (2010 Baseline)

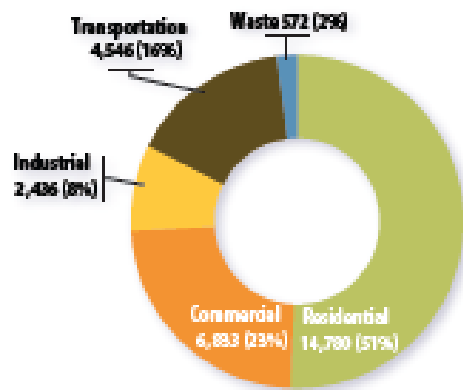
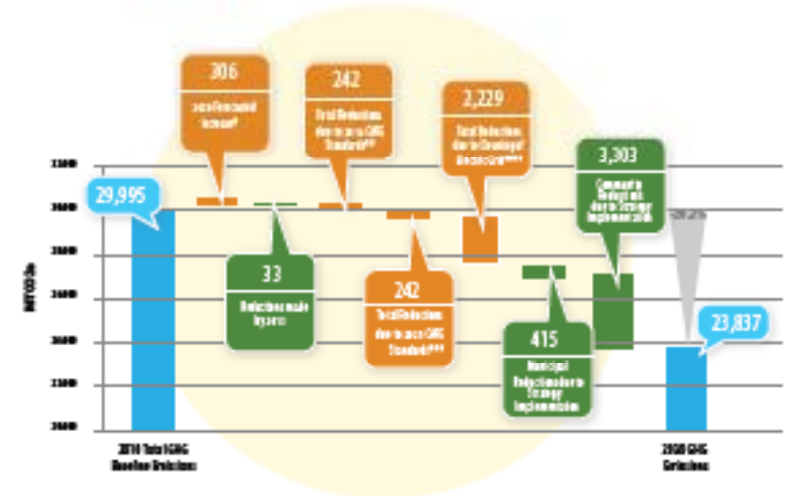


FIGURE 6: TOTAL POSSIBLE REDUCTIONS BY 2030



An Independent Contractor to:



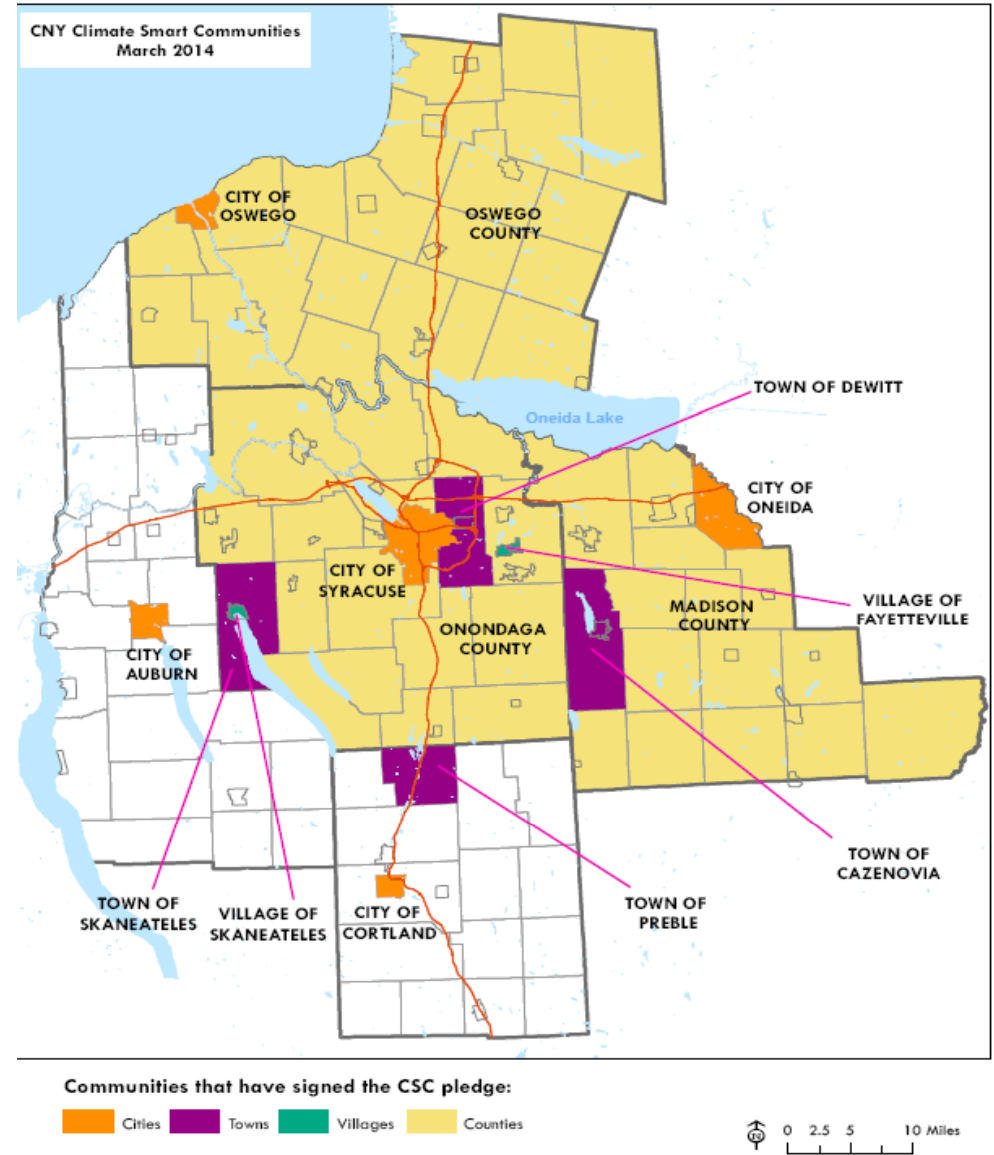
- Presentations and workshops that are customized for residential, commercial, municipal, and institutional groups
- Educational webinars and documentaries
- Climate updates, grants, and networking opportunities
- Improved municipal operations and infrastructure
- Increased energy independence and security
- Positioning for economic growth
- Taxpayer dollar savings
- **PRIORITY FUNDING STATUS**

An Independent Contractor to:



# Three Things To Do Now

1. **Join the NYS Climate Smart Communities Program**
2. **Identify Cleaner Greener Communities Projects**
3. **Work with CNY RPDB to become “Solar Ready”**
  - ✓ Adopt the NYS Unified Solar Permit
  - ✓ Collaborative procurement





# Thank You!

Questions?

[www.cnyrpdb.org](http://www.cnyrpdb.org)  
[ccarrick@cnyrpdb.org](mailto:ccarrick@cnyrpdb.org)

