

# Climate Smart Communities Webinar

## Telephone call-in number

- 1-866-394-2346
- Code: 1982360347#
- No audio signal will be transmitted over the Internet

# Welcome

**Kim Farrow**

**Environmental Program Specialist**

**Office of Climate Change**

**New York State**

**Department of Environmental Conservation**



# Climate Smart Communities Webinar

## E-Mail Addresses

- Mark Lowery  
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# Environmental Excellence Awards Program

## Recognizes

- Innovation
- Sustainability
- Creative Partnerships

## Honors

- Businesses
- Municipalities
- Not-For-Profits
- Governments(except DEC)
- Academia
- Individuals



# Environmental Benefits

Past winners have had an incredible positive impact on New York's environment:

- Reduced CO2 emissions by 1,200 tons
- Eliminated 2.10 million pounds of hazardous waste;
- Saved 26 million kilowatt hours of electricity;
- Reduced water consumption by more than 15 million gallons;
- Recycled 382.5 million pounds of solid waste; and
- Preserved more than 149,000 acres of open space.



# To be considered, a project must:

- Be in full operation for at least 1 year;
- Result in significant and measurable environmental benefits;
- Be submitted by an applicant who does not have compliance concerns;
- Be unique ... innovative ... cutting edge



# A robust application review process ...

- Eligibility Review by Internal Review Committee;
- Technical Review and Compliance Review by DEC staff in the Central Office & Regional Offices;
- Short list of applications forwarded to the External Review Committee (ERC);
- ERC meets 2 times and ultimately develops a list of recommended projects to the DEC Commissioner for consideration.



# Application Review Schedule

- Applications must be postmarked no later than Friday May 18, 2012;
- Eligibility, Technical and Compliance Reviews conducted during the summer;
- External Review Committee review and meetings during late summer/early fall;
- Awards Ceremony November/December



# What's In It For You?

- Recognition for your commitment and forward thinking;
- Visibility for your community and your achievements;
- Positioning for continued economic growth via "green" products and services



# For More Information ....

Marna Posluszny (518) 402-9160

[maposlus@gw.dec.state.ny.us](mailto:maposlus@gw.dec.state.ny.us)

DEC website at:

<http://www.dec.ny.gov/public/945.html>



# Climate Smart Communities

## Regional Coordinators Pilot Program

Jennifer Manierre  
NYSERDA  
Associate Project Manager  
Energy Efficiency Services  
[jtm@nysерda.org](mailto:jtm@nysерda.org)

# Climate Smart Communities Regional Coordinators Pilot

## **NYSERDA's Mission Statement**

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

# Climate Smart Communities Regional Coordinators Pilot

## Goal of this Pilot Program:

Effect real change in the communities with which we are working and lay the foundation for a future statewide support program for Climate Smart Communities

# Climate Smart Communities Regional Coordinators Pilot

## Scope of this Pilot Program:

4 Regional Coordinators

Statewide Coordinator

Land Use and Transportation Planning Support,  
Development of Land Use Toolkit

# Questions?

Jennifer Manierre  
NYSERDA  
Associate Project Manager  
Energy Efficiency Services  
[jtm@nyserdera.org](mailto:jtm@nyserdera.org)



# FlexTech Program

## Identification of Energy Efficient Opportunities

Provide comprehensive, customized  
cost-shared energy studies

### Eligibility:

- Contribute to Systems Benefit Charge

### Cost:

- Up to 50% of the project cost, or 10% of annual energy cost, may be cost-shared by NYSERDA

# FlexTech Program

## Identification of Energy Efficient Opportunities

- General Feasibility Studies
- Peak-Load Reduction and Load Management
- Industrial and Process Efficiency Analysis
- Data Center Efficiency Analysis
- Energy Efficiency Retro-Commissioning
- Long-Term Energy and Carbon Management
- Energy Procurement Strategies
- Peak-Load Reduction Plans
- CHP & Renewable Generation Studies

# FlexTech Program

## Identification of Energy Efficient Opportunities

- What's the process?
  - Talk with NYSERDA to determine needs and eligibility.
  - Select FlexTech Consultant.
  - Complete the application (CFA).
  - Consultant develops Scope of Work, and submits to NYSERDA for review. Once reviewed, it is submitted to customer for review, comments and approval.

# FlexTech Program

## Identification of Energy Efficient Opportunities

- What's the process?
  - Negotiate terms of payment with Consultant for your share of project cost.
  - Consultant receives Notice to Proceed from NYSERDA and implements the study.
  - Consultant develops draft reports and submits to NYSERDA. Final report is submitted to you by NYSERDA.

# FlexTech Program

## Identification of Energy Efficient Opportunities

- For more information:

<http://www.nyserda.ny.gov/Pages/Sections/Commercial-and-Industrial/Programs/FlexTech-Program.aspx>

***New York Energy \$mart<sup>SM</sup>***  
**Commercial Lighting Program**

*Partnering with the lighting industry to promote*  
***The Right Light<sup>SM</sup>***  
*effective, energy-efficient lighting*

# Agenda

- What happens after FlexTech?
- Present an overview of the **New York Energy \$mart<sup>SM</sup>** Commercial Lighting Program (CLP)
- Define CLP Business Partner
- Describe Business Partner role
- Define effective, energy-efficient lighting

# What happens after FlexTech?

- What do I do with this audit?
- What if I can only afford some options?
- What is the right light for my facility?
- Where do I purchase materials?
- How do I know I am getting NYSERDA qualified lighting and controls?

# NYSERDA's Commercial Lighting Program

- Promotes ***The Right Light*<sup>SM</sup>** – effective, energy-efficient lighting solutions that result in better lit spaces that cost less to operate.
- Targets commercial spaces between 1,000 and approximately 100,000sf (**project size, not building size**)
- **Partnership** between NYSERDA and the lighting industry through a network of trained Business Partners.

# How does NYSERDA Promote Effective Energy-Efficient Lighting?

## Business Partners:

- lighting contractors
- energy service companies (ESCOs)
- distributors
- lighting designers
- interior designers
- architects, engineers, and
- manufacturer reps

## Provides:

- Training and design assistance
- Financial Incentives
- Marketing Materials
- On-line tools
- Promotional Outreach to End Users

Free to All CLP  
Business Partners

## *The Right Light<sup>SM</sup>*

Energy efficiency  
and quality for  
a space and the  
people within it.





# Defining Effective, Energy-Efficient Lighting



# Effective, Energy-Efficient Lighting Design



**Lighting systems that are optimally designed to meet specific application and energy-efficiency needs. The systems are easy to use, aesthetically pleasing, and enhance the visual capability of people using the space.**

This is how NYSERDA (working with industry players) defines *The Right Light*<sup>SM</sup> effective, energy-efficient lighting.

# *The Right Light<sup>SM</sup>*

## Does Not Have to Be Expensive



*Living room furniture, as it appears under the Bare Bones Furniture new lighting system.*

**Using industrial suspended luminaires with louvers provides proper light levels with reduced glare**

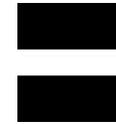
This Project was done for under \$1 per square foot and will save over \$4,000 per year in energy costs!

# The Right Light<sup>SM</sup>

Proper Selection  
of Technologies



Proper System  
Design and  
Layout



Effective,  
Energy-Efficient  
Lighting Design



- Using today's energy-efficient technologies combined with proven solid design principles will lead to an effective, energy-efficient lighting design.
- **Both parts are required.**
- Use this simple “equation” concept to convey the definition of effective, energy-efficient lighting to your customers.

# Benefits for the End-User

- The benefits of ***The Right Light***<sup>SM</sup> – effective, energy-efficient lighting for the end-user – include:
  - Proper lighting for the task
  - Elimination of common problems such as glare
  - Improved image for the end-user
  - Higher sales and repeat business
  - More productive work force
  - Energy savings and reduced operating costs

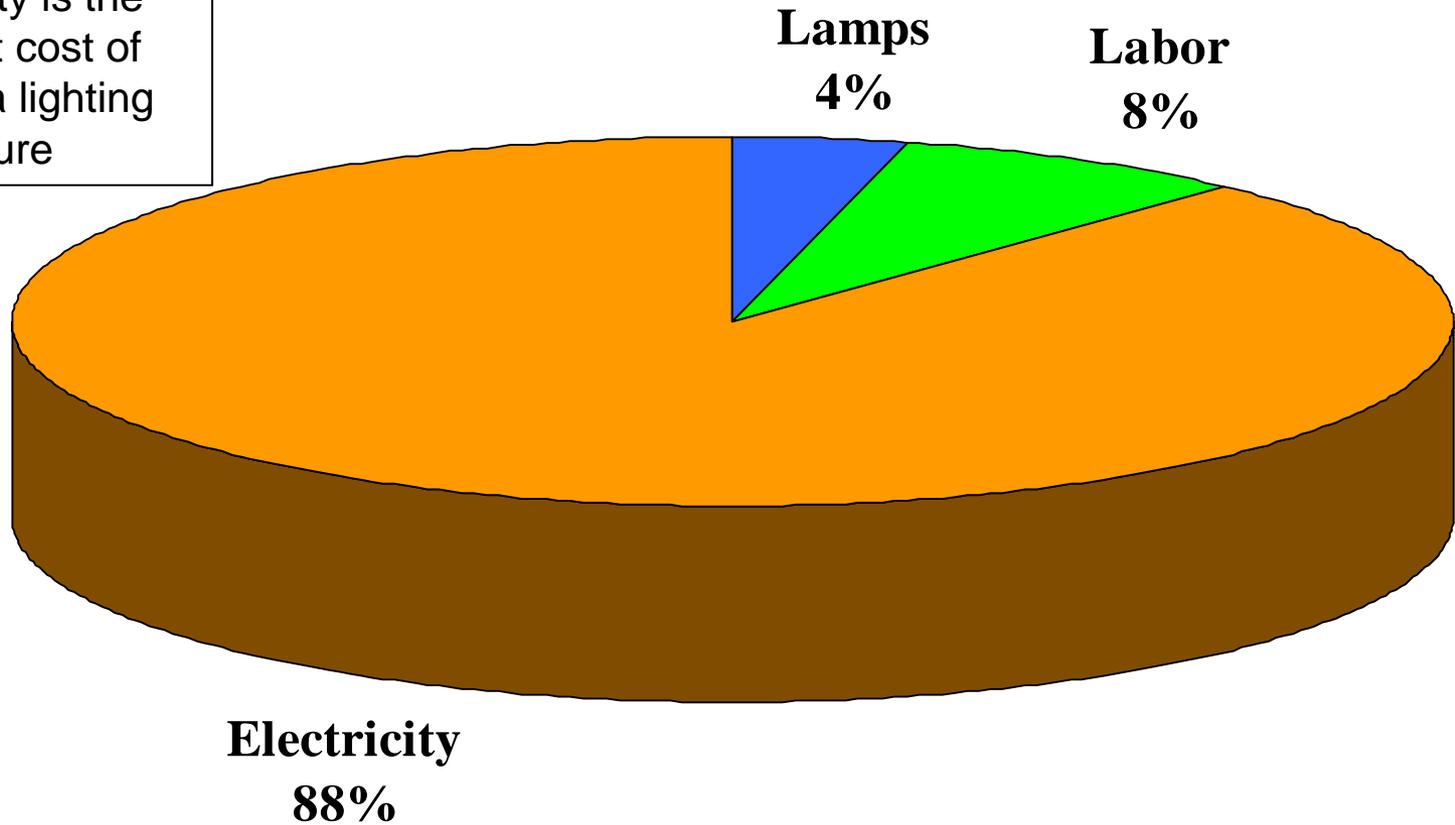
# Energy Savings

Energy savings, while still providing the appropriate lighting solution can be achieved by:

- Reducing fixture wattage
- Using more energy-efficient luminaires to deliver the light
- Designing for the appropriate light level – not wasting energy where it is not needed
- Controlling the hours of use with vacancy sensors
- Dimming lights as appropriate to the task, or in relationship to natural daylight entering the space

# Cost of Light

Electricity is the greatest cost of owning a lighting fixture



## HPT8 Savings Example: 3,000 sq. ft. Retail Store

- Annual energy cost using (35) 3-lamp fixtures and a target light level of 75 footcandles (fc) for general merchandise:
  - F34T12 System at 60fc: \$1,890
  - F32T8 Standard System at 78fc: \$1,441
  - HPT8 System at 76fc: \$1,196
- The HPT8 System saves \$694 per year in energy costs compared to an old T12 system in the same application.

*Based on 3,120 operating hours per year and an energy cost of \$0.15 per kWh*

# The Lighting Criteria

The following help make lighting projects effective, and energy efficient, and the Program uses these to set the project criteria:

- Color Rendering Index (CRI)
- Luminous Intensity or Advanced Lighting Distribution with Glare Control (Glare)
- Mean Illuminance (Light Level)
- Illuminance Uniformity (Light Uniformity)
- Energy Use (Watts per square foot)
- The metrics are **minimum measures of lighting quality**. They will not guarantee a quality installation but will help Business Partners avoid potential problems.
- Fixtures using 4-foot T8 lamps must include CEE Qualified High Performance T8 ballasts and High Performance T8 lamps **or** Reduced Wattage T8 lamps.

# Controls

The Commercial Lighting Program recognizes the importance of controls. There is a separate training module with more details on controls. Lighting Controls that turn off lights when the space is vacant are required in

- Private Offices, Conference Rooms, Break Rooms, Warehouses, Restrooms, Classrooms

# NYSERDA & LED

- As of January 1, 2011, in order for LED products (lamps and fixtures) to qualify for NYSERDA incentives, they must be either ENERGY STAR qualified, or listed on the DesignLights™ Consortium Qualified Product List.
- This applies to Commercial Lighting Program projects as well as the Existing Facilities Program and the New Construction Program.
- **Caution** - when using integral LED replacement lamps, Code requires W/sf calculations based on the maximum fixture wattage rating, and not the wattage of the lamp.

# Benefits for You

- Visual Comfort
  - reduce eye strain/fatigue
- Visual Interest
  - potential increase in sales
- Visual Performance
  - productive work environment
- Less Absenteeism
- Repeat Customers



# Benefits to You

## PARTICIPATION CERTIFICATE

The New York State Energy Research  
and Development Authority Acknowledges

XYZ Company, Inc

for participating in the **New York Energy Smart™** Commercial Lighting Program  
and demonstrating commitment to effective, energy-efficient lighting.

Project Implemented by CLP Business Partner CVR, Inc

Project GHG Emission Savings 2,000 lbs CO<sub>2</sub>e      Project Energy Savings 2520 kWh

Savings based on a comparison to a "typical" lighting project of equal size.



NYSEDA

10/8/2011

Date



**CLP End User Plaque  
Identifies kWh and  
GHG reductions.**

# See the Benefits

The New York State Energy Research and Development Authority

## Commercial Lighting Program

### INDUSTRIAL LIGHTING SOLUTIONS THE RIGHT LIGHT™ IN DIVERSE INDUSTRIAL APPLICATIONS

What do a tissue manufacturing plant, a truck repair and maintenance shop, and a distribution center all have in common? Each of these industrial facilities found a solution to save energy and improve their lighting by working with New York Energy Smart™ Commercial Lighting Program (CLP) Business Partners. While each solution is different, the facilities collaborating with CLP Business Partners chose to use *The Right Light*™ - an effective, energy-efficient lighting system.

#### HIGH-OUTPUT T-5 LINEAR FLUORESCENTS FOR A WAREHOUSE AREA

Irving Tissue manufactures Scottex facial tissues at their Fort Edward facility. The company was looking for ways to reduce energy costs at the site. Kim Clark, Irving Tissue's Facilities Manager, invited Mitch Hall of ASKCO Electrical Supply Company, a CLP Business Partner Distributor in Gen Falls, for assistance. Together, they determined that the existing high-pressure sodium (HPS) lighting system in the 15,000 square foot warehouse area could be replaced with a more efficient system.

One key problem was the height of the warehouse ceiling: at a height of 24 feet, the ceiling fixtures must be very powerful for light to reach the warehouse floor. While HPS systems are very efficient (based on lumens per Watt or lamp efficacy), the existing fixtures were not effective in providing enough light for the warehouse floor. Other challenges included minimizing glare for employees working in the space and providing uniform lighting to safely illuminate pallets of products that are constantly moved throughout the warehouse.



The solution was to install new three lamp, T-5/HO linear fluorescent high-bay fixtures that not only yield the high lumen output needed at a higher efficacy than the old system, but also feature good glare control. The fixtures provide the proper

Three-lamp T-5/HO high-bay fixtures illuminate their warehouse floor in adequately lit area from 24 feet above. Photo courtesy of Stellar Lighting.

"Simply put, the new lighting is a lot better. Nobody has anything negative to say about it."  
- Kim Clark,  
Irving Tissue,  
Facility Manager

#### Project Profile

Type of Spaces  
Manufacturing Repair  
Distribution

#### Project Objective

Proper light levels with limited glare, improved color rendering, and reduced electricity costs.

#### Project Benefits

Employees can perform their work more productively and with fewer errors. Electricity bills for lighting reduced significantly.

**nyserda**  
Energy. Innovation. Solutions.

**CLP Case Studies** show how others have saved energy with *The Right Light*™

# “OTHER”

## New York Energy \$mart<sup>SM</sup> Programs

### Building Owner/End User Programs

- Helps to offset costs of energy efficient equipment for the Building Owner or End User.
- Incentives:
  - **Consolidated Funding Application (CFA)** – **ALL** end user applications **MUST** use the CFA available at each program web site.
  - **New Construction Program PON 1601**
  - **Existing Facilities Program PON 1219**

# Upcoming Presentation

- Project – Washington County Office Buildings – Fort Edward, NY
- Three CLP Business Partners involved
  - Designer – Abbott Energy
  - Distributor – Green Mountain Electric
  - Representative – Point Source Group

# Other NYSERDA Resources

## For Information on Other NYSERDA Business owner Programs other Than the Commercial Lighting Program

- toll-free 1-866-NYSERDA
  - (1-866-697-3732)
- Visit [www.nyserda.ny.gov](http://www.nyserda.ny.gov)
  - View Funding Opportunities for various Program Opportunity Notices

# Contact Information

**CLP Web Site:**

**<http://www.nyserda.ny.gov/Page-Sections/Business-Partners/Commercial-Lighting.aspx>**

Please add this to your favorites or bookmark this page.

\*\*\*\*\*

**General Information: Ben Hayes**

**Email: [clp@icfi.com](mailto:clp@icfi.com)**

**CLP Toll-Free Number: (866) 698-8177**

# Washington County Office Buildings: Lighting Upgrade

Presented by  
Daniel Underwood - Energy Consultant  
Green Mountain Electric Supply



# Washington County

**Washington County** is approximately 82 miles long and 20 miles wide resulting in an area of 837 square miles. The County is largely agricultural in nature and has no cities within its borders. There are approximately 240 miles of State roads, 280 miles of County roads, and 1060 miles of Town and Village highways.



**History:** Charlotte County was formed from Albany County in March of 1772. It was named in honor of Queen Charlotte, wife of King George III of England. In April of 1784, the Legislature passed an act changing the name of Charlotte County to Washington because of its reference to the Queen and the bad feelings the new Country had about England.



# In the Beginning - December 2008

- County Administrator asked Harrison Steves – Superintendent of Buildings & Grounds – to begin energy review of county offices in Fort Edward, NY
- Harrison discussed initial options with Green Mountain Electric Supply (GMES)



# First Steps - February 2009

- Harrison and Dan attend Lithonia Lighting seminar.
  - Lithonia demonstrated and reviewed multiple upgrade options.
  - CLP Account Manager presented various NYSERDA lighting incentive programs.
- Prepared energy analysis for partial one floor upgrade.
  - Campus consists of 3 buildings with 3 floors each.
- Focused on Lithonia 2ES8 2 light recessed 2x4 and MS8 2 light industrial fixtures.



# Partial Floor Analysis - Existing

Fixture Type	Quantity	Input Watts	Extension
2x4 4lt T8	74	115	8,510
2x4 4lt T8	2	88	176
2x4 2lt T8	10	59	590
2x2 2lt T8	32	64	2,048
1x4 2lt T12 industrial	79	80	6,320
1x4 1lt T12 strip	6	50	450
<b>Total Watts</b>			<b>18,094</b>



# Partial Floor Analysis - Proposed

Fixture Type	Quantity	Input Watts	Extension	Fixture Incentive	Incentive Extension
2x4 2lt HPT8 lbf	108	48	5,184	\$15	\$1,620
1x4 2lt HPT8 lbf industrial	54	48	2,592	\$10	\$ 540
1x4 1lt HPT8 lbf strip	4	25	100	\$10	\$ 40
<b>Total Watts</b>			<b>7,876</b>		<b>\$2,200</b>

- HPT8 = lamps and ballasts are High Performance T8 as listed by Consortium for Energy Efficiency (CEE)
- lbf = low ballast factor ballast
- Quantities changed – 1-for-1 replacement not required everywhere



# Partial Floor Analysis - Energy

- Annual Operating hours =
  - 10 hours per day X 5 days per week X 52 weeks per year = 2,600 hours
- Demand Reduction =
  - 18,094 existing watts – 7,786 proposed watts = 10,308 watts reduced - > 50% reduction
- Annual Energy Reduction =
  - 10,308 watts X 2,600 annual hours / 1,000 = 26,800 kilowatt hour (kWh) reduction



# Partial Floor Analysis - Dollars

- Annual Energy Cost Savings =
  - 26,800 kWh X \$0.16/kWh cost = \$4,288 saved
- Anticipated Incentive = \$2,200
- Proposed fixture cost = \$15,000
- Payback Period =
  - \$15,000 fixture cost - \$2,200 incentive / \$4,288 energy cost = 2.99 year payback



# Partial Floor Analysis

## Other Projections

- Increased light levels
- Reduced maintenance costs
  - 20% minimum longer lamp life
  - Fewer lamps
- Improved job performance from improved color rendering
- OSRAM Quick 60+ Warranty
  - 60 months for ballasts
  - 36 months for lamps



# Next Steps

- 3/09 – decided to proceed in two phases
- Sought Existing Facilities Program Performance Based approval
- Phase 1 – 1,025 fixtures – RFP 10/09
  - Ordered 2/09
  - Installation completed 5/09
- Phase 2 – 718 fixtures – RFP 1/11
  - Ordered 4/11
  - Installation completed 9/11



# Final Steps – Net Results

- 241,891kWh (13.04%) reduction from 2009 to 2011
- \$38,702 energy cost reduction from 2009 to 2011
- Net cost = \$115,180
- Net Payback period = 2.98 years

	2011	2010	2009
January	121,639	140,991	148,136
February	120,185	129,734	136,698
March	126,494	135,158	132,143
April	114,525	128,417	145,768
May	118,344	126,947	152,054
June	165,685	162,073	173,877
July	146,531	180,674	183,923
August	170,145	178,690	170,369
September	148,248	161,562	185,104
October	135,249	135,345	151,960
November	126,361	118,410	133,845
December	120,365	128,052	141,785
Totals	1,613,771	1,726,053	1,855,662



# People Results

- Harrison said
  - Project was worth doing.
  - Happy with CLP Business Partner assistance.
  - Project went smoothly by following advice about job packing fixtures.
- Positive employees reactions about improved environment and less glare.



# Contact Information

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# Thank you!

