



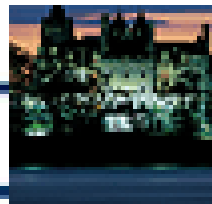
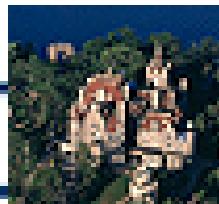
# Upstate Energy Expo 2010 NYSERDA Program Overview

March 30, 2010

Cheryl Glanton, Project Manager



**NEW YORK STATE**

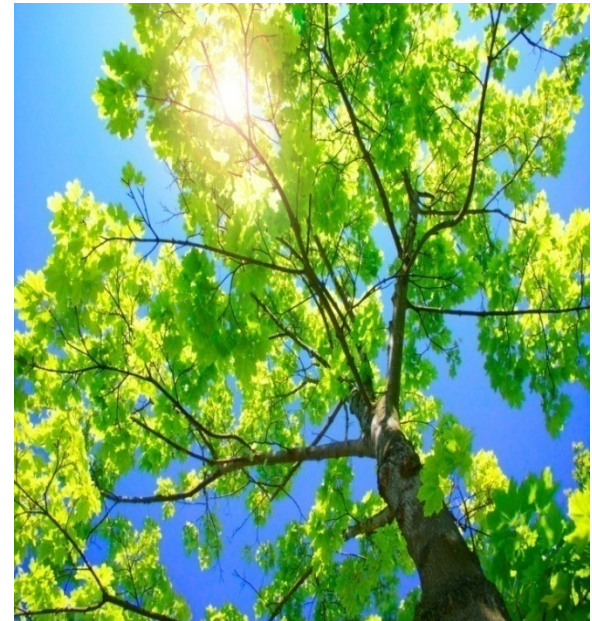


## What is NYSERDA?

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

### **Mission**

*Use innovation and technology to solve some of New York's most difficult energy and environmental problems in ways that improve the State's economy*



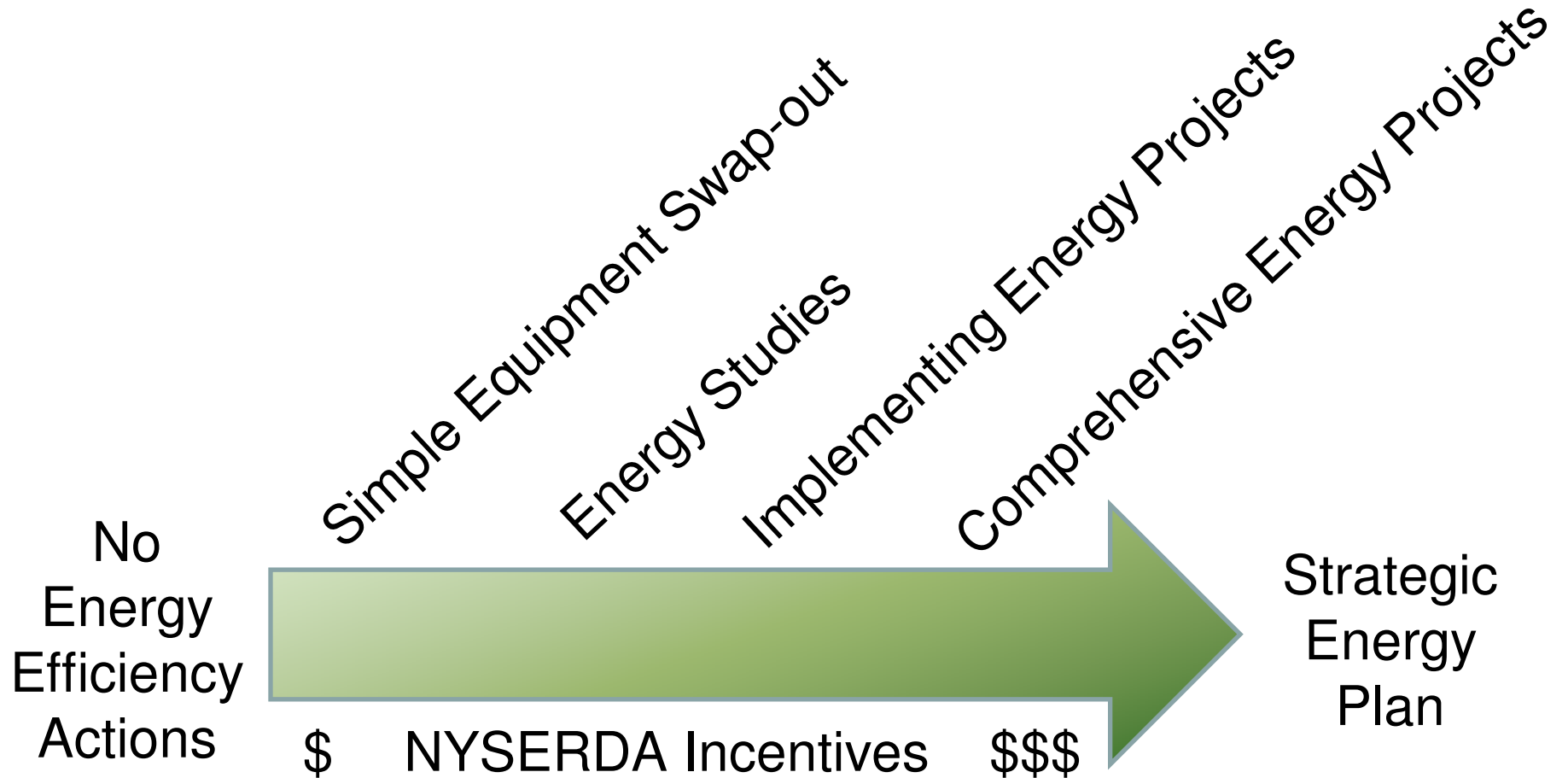


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New York State Energy Research and Development Authority

[www.nyserdera.org](http://www.nyserdera.org)

# Energy Efficiency Continuum





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## New Construction

## Existing Facility

	New Construction	Existing Facility
Technical Assistance	<p><b>Outreach Project Consultants</b> Customer support</p> <p><b>Technical Assistants (TA)</b> Evaluate energy-saving options Energy modeling</p>	<p><b>Focus on Industry Contractor</b> Customer support LEAN to Energy Assessments</p> <p><b>FlexTech Program</b> Energy Studies</p>
Financial Incentives	<ul style="list-style-type: none"><li>• Pre-Qualified</li><li>• Custom Measures</li><li>• Whole Building Design</li><li>• Green Building Option</li><li>• Industrial &amp; Process Efficiency</li></ul>	<ul style="list-style-type: none"><li>• Pre-Qualified</li><li>• Performance Based<ul style="list-style-type: none"><li>• Electric</li><li>• Natural Gas</li></ul></li><li>• Industrial &amp; Process Efficiency</li></ul>

## **New Construction Program: New Construction & Renovations**

**Objective:** Support a transformation in the way buildings are designed & constructed

### **Services:**

- Energy Modeling
- Commissioning
- Green Building Planning Assistance
- Additional funding for LEED® rated buildings

**Apply Early in the Process**  
- Ideally at design Intent



## New Construction Program Incentive Levels

- Pre-Qualified Equipment
  - Menu-based
- Custom Measure
  - System-based
- Whole Building Design
  - Building-based
- Green Building LEED®
  - Building-based + certification





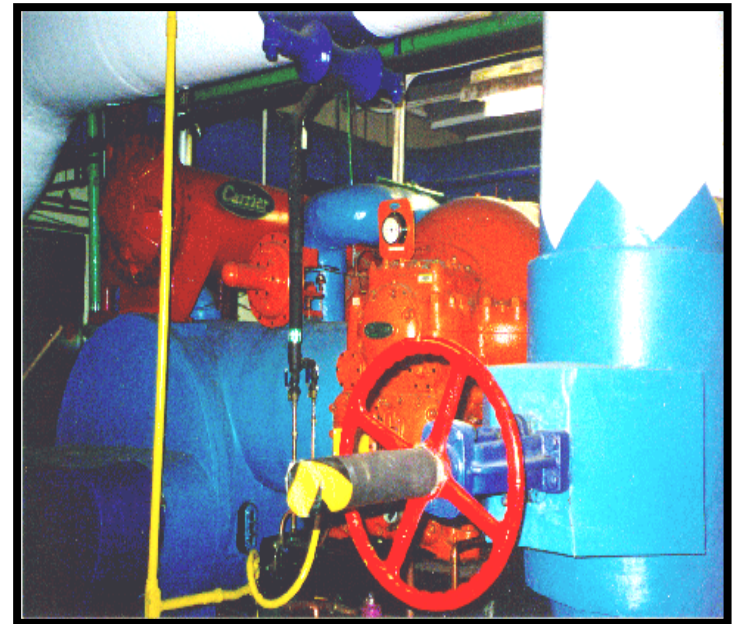
ENERGY STUDY

# FlexTech Program

## Flexible Technical Assistance

Comprehensive, customized energy studies

- Cost share 50/50
- Up to \$1,000,000, max 10% of energy costs
- Engineering feasibility studies
- Energy master plans
- Project specific: Compressed Air
- Energy procurement
- Retro-Commissioning
- CHP/Renewables
- Load curtailment
- Energy advisor consulting





ENERGY STUDY

# Energy Audit Program

## Annual electric = \$75,000 or less

- Apply on-line:  
[www.nyserda.org/programs/energyaudit.asp](http://www.nyserda.org/programs/energyaudit.asp)
- Regional energy contractor schedules visit
- Single day audit & data collection
- Audit report
  - utility bill analysis
  - energy conservation recommendations
  - financial analysis, cost & payback
- Cost of study can be applied to implementation

Annual Electric Bill	Audit Fee
\$0 - \$24,999	\$100
\$25,000 - \$75,000	\$400





**IMPLEMENT**

# Existing Facilities Program: Pre-Qualified Incentives

Small energy efficiency projects & equipment replacement

- Incentives up to \$30,000 (\$/unit)
- Available for
  - Lighting
  - HVAC
  - Chillers
  - Motors
  - VFDs
  - Refrigeration
  - Commercial kitchen equipment
  - Interval Meters





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**IMPLEMENT**

## **Existing Facilities Program: Performance Based Incentives**

### **Electric Efficiency**

- Compressors, VFDs, Motors, Lighting, HVAC, Energy Management Systems (EMS)
- Energy analysis required
- Incentive: \$.12/kWh & \$.16/kWh energy savings/yr
- Cap: 50% of project cost or \$2 million per site
- M&V: required >500,000 kWh; 1,000,000kWh lighting only



## Additional Incentives

Existing Facilities Performance-Based Incentives	Upstate	Con Edison
Energy Storage/Electric to Non-Electric Cooling	\$300/kW	\$600/kW
Natural Gas	\$15/mmBtu	\$20/mmBtu
Demand Response	\$100/kW	\$200/kW
Combined Heat and Power (CHP)	\$0.10kWh +600/kW	\$.10kWh+ \$750/kW

## More than the Mechanical Room



### Productivity-based savings



- Energy use is embedded in every part
- Every piece of scrap has an energy component
- Re-work uses additional energy
- Overtime requires additional energy use
- Lean/6 Sigma/Productivity Projects all have an energy component

If we can calculate energy savings, we have an incentive

# New Construction & Existing Facilities: Industrial and Process Efficiency Program

**INDUSTRIAL:** Improved productivity = less energy

- Process improvement
- Waste reduction
- Compressors
- Motors
- Lighting
- VSD's



- Measurement: Energy saved per unit produced
- Incentive: \$.12/kWh of energy saved/yr
- Engineer Analysis: required to determine energy savings
- Minimum: \$10,000 project incentive (83,333 kWh)
- Cap: 50% of project cost or \$5 million per site
- M&V: required >500,000 kWh

## Dielectric Labs Case Study

- Started as Capacity Project
- Replaced 2 existing machines with 1 new combined machine
- New sorter/tester saved energy by
  - Consolidated machines
  - Higher output
  - Used less compressed air
- Reduced energy use 97% per piece or 325,000 kWh/year

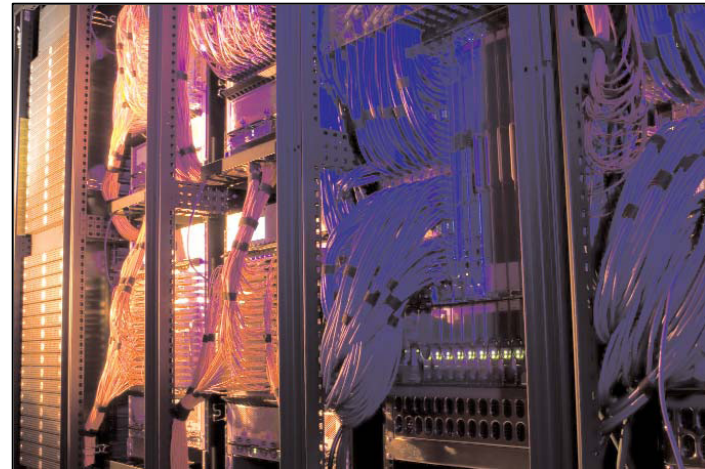


**Industrial & Process Efficiency Incentive \$39,000**

# New Construction & Existing Facilities: Industrial and Process Efficiency Program

**DATA CENTERS:** Improved IT & computing = energy efficiency

- Energy savings per unit of data processed
- Support system efficiency:
  - Process cooling
  - Air flow management
  - Utilization of waste heat
  - Virtualization
  - Next generation servers
  - Applications management strategies



# Application Process

**Existing Facilities Program Application**

(continued from previous page)

**Project Description**

Pre-Qualified (If checked, go directly to "Agreement to Terms and Certification" below) Project Cost:

Performance-Based

Gas

Electric (If checked, MUST choose one at right)  Cooling  Lighting  Motors  Controls/WfDs

Demand Response (If checked, MUST choose one at right)  On-Site Generation  Load Curtailment

Combined Heat and Power (CHP applications must include an engineering analysis following the requirements in the CHP systems manual)

Industrial Process Efficiency (If available, include a process schematic)

kWh Savings	Annual kWh Savings	Fuel Savings (or Increase)	Annual \$ Savings	Project Cost

If applying with a multi-site project, please provide a site specific breakout of each of the above data.

Please use this space to describe the project in detail. Include items like baseline equipment and efficiencies, operating schedules, proposed equipment, and efficiencies, etc. If the proposed equipment produces emissions, list the emissions rate. Be sure to attach spec sheets for any equipment proposed for installation.

**Agreement to Terms and Certification**

Pre-qualified projects must submit an application for incentives within 90 days of invoice for the purchase and installation of pre-qualified measures. All other projects must submit the application either before, or within 90 days of, contracting for the project.

I understand that this application may not be approved if the requirements of the program are not met. I understand that that payment will be contingent on meeting all the terms and conditions of the program.

If applying for electric incentives, I certify that this Facility is an electricity distribution customer of a New York State investor-owned utility, and pays the System Benefits Charge.

If applying for gas incentives, I certify that this Facility is a gas distribution customer of Con Ed and is assessed the Monthly Rate Adjustment, or is a National Fuel Gas commercial customer.

NYSERDA is instituting a white tags Pilot. By checking this box I transfer ownership and rights to all energy efficiency benefits associated with this project to NYSERDA - including, but not limited to white tags, environmental certificates, offsets or credits. Collected white tags will be used for increased funding opportunities for NYSERDA's current and future incentive programs.

Applicant/Company Name:  Facility Name (Required unless same as Applicant):

Print Name & Title:  Print Name & Title:

Applicant Signature:  Date:  Facility Signature:  Date:

Existing Facilities Program Application | page 2 of 2

- Submit application
- Assign Technical Support
- Review Project Savings
- Purchase Order Issued
- Customer Installs Project
- Verify installation
- Award incentives

## Conclusion

- There are opportunities to improve the energy performance of most facilities.
- Energy efficiency is less expensive than energy production.
- Many energy measures also generate economic, process, comfort and environmental benefits.
- NYSERDA or National Grid incentives can help justify projects.



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