



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Case Studies in the Making:

Energy Audits in the Mid-Hudson Region



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Why Do An Energy Audit?

- To understand your energy use and costs
- “You can’t manage what you don’t measure”
- To identify and quantify savings opportunities
- Two options available from NYSERDA
 - ✓ **Energy Smartsm** Energy Audit Program (<\$100,000 in electricity costs per year)
 - ✓ FlexTech / Technical Assistance (>\$100,000 in electricity costs per year)



How the Energy \$martsm Energy Audit Program Works

- You provide energy bills
- We perform energy walkthroughs
- We analyze energy usage & identify savings
- We report results & provide recommendations
- We help you apply for NYSERDA incentives and low-interest loans
- We help you get the equipment installed



Energy Efficiency Opportunities In Your Building...



- Energy-efficient lighting
- Smart controls for heating & cooling equipment
- Premium-efficiency motors
- Variable-speed drives
- Window films
- Insulation





Additional NYSERDA Support

Low-Interest Financing:

4% interest rate buy-down on loans for energy-efficient products and renewable technologies, **AND**

Smart Equipment Choices Incentives:

to help pay for installing specific energy-efficient equipment.





Results

- ✓ Quick and easy upgrades
- ✓ Little or no net out-of-pocket expenses
- ✓ Positive cash flow from day one
- ✓ Better work environment for employees and comfort level for customers





What does the Audit Cost?

For annual electric bills....	Customer pays....
Less than \$12,000	\$200
Between \$12,000 and \$48,000	\$400
Between \$48,000 and \$100,000	\$600

The audit fee is refunded if you implement the improvements!





Energy Audits in the Mid-Hudson Region

- Big Apple Circus
- Herzog Supply
- John Coleman High School
- Samuel French
- Town of Ulster
- Town of Plattekill
- Town of Woodstock (3)
- Ulster County (8)
- Ulster Savings Bank
- Village of New Paltz



Case Study – Ulster Town Hall

- 6,800 s.f. two-story building, built in 1975
- Houses police department, town offices and courtrooms
- Lighting primarily tube-type fluorescent fixtures, 34 Watt T12 ES lamps and magnetic ballasts
- Heat and domestic hot water provided by natural gas fired boiler.
- Air conditioning provided by two split system units
- Single pane windows throughout the building
- Annual Electric Costs: \$15,877 / \$0.08 per kWh
- Annual Natural Gas Costs: \$7,681 / \$0.97 per therm





Summary of EEOs – Town of Ulster

Summary of Energy-Efficiency Opportunities							
Description	Cost to Install	Annual Savings	Simple Payback	Savings as % of Annual Energy Costs	Annual kWh Savings	Peak kW Demand Savings	Annual mmBtu Savings
EEO #1: Lighting Upgrade	\$16,596	\$6,259	2.7	26.6%	78,081	11.4	0.0
EEO #2: Install 2nd Glazing Over Windows	\$10,127	\$805	12.6	3.4%	587	0.0	78.3
Totals	\$26,722	\$7,064	3.8	30.0%	78,668	11.4	78.3



BIG APPLE CIRCUS

Case Study – Big Apple Circus

- Warehouse/storage/office facility built in 1997
- Lighting systems are T12 fluorescent and metal halide (HID) fixtures
- Natural gas heaters in the warehouse area
- Cooling provided by exhaust fans in the warehouse
- Double pane windows throughout the facility
- Annual Electric Costs: \$39,487 / \$0.11 per kWh
- Annual Natural Gas Costs: \$41,078 / \$1.00 per therm
- Big Apple produces 1,000 gallons of waste oil each year



Summary of EEOs – Big Apple Circus

Summary of Energy-Efficiency Opportunities							
Description	Cost to Install	Annual Savings	Simple Payback	Savings as % of Annual Energy Costs	Annual kWh Savings	Peak kW Demand Savings	Annual mmBtu Savings
EEO #1 Energy Efficient Lighting	\$33,968	\$7,236	4.7	9.0%	63,976	28.6	0.0
EEO #2 Waste Oil Heater for Shoulder Month Supplemental Heat	\$7,750	\$1,650	4.7	2.0%	0	0.0	172.5
EEO #3 Control on Exhaust Fans	\$2,500	\$2,981	0.8	3.7%	26,355	29.8	0.0
Totals	\$44,218	\$11,867	3.7	14.7%	90,331	58.5	172.5



Financing the EEOs

Installation Cost for all Improvements: \$44,218

Anticipated Annual Savings: \$11,867

Simple Payback: 3.7 years

Return on Investment: 27%

Estimated Cashflow Analysis				
Year	Annual Savings	Annual Payments	Net Savings	Cumulative
1	\$11,867	(\$11,981)	(\$114)	(\$114)
2	\$12,045	(\$11,981)	\$64	(\$50)
3	\$12,226	(\$11,981)	\$245	\$195
4	\$12,409	(\$11,981)	\$428	\$623
Totals:	\$48,547	(\$47,923)	\$623	\$655

Positive cash flow averages \$156 per year.





3 Ways to Participate and Start Saving....

- Sign up today for an energy audit
- Call the toll-free Energy Audit Hotline at **1-800-427-8515**
- E-mail rgiovanni@trcsolutions.com

For more information, visit www.nyserda.org.