

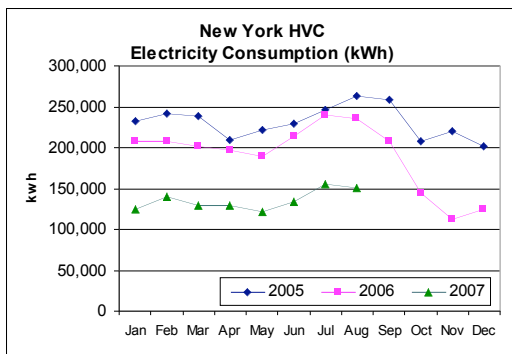


# Energy Management Case Study

## FCSD Lighting Retrofit Performance Contract



New York HVC (Typical Site)  
Lighting Retrofit Completed Oct 2006



### Annual kWh Usage Savings 70% kWh Reduction

Total Before: 27,600 annual mWh used  
Total After: 8,200 annual mWh used

### Brief:

#### Program Name:

Ford Customer Service Division Lighting Retrofit

#### Process:

New England Energy Management, Inc of Danbury, CT (NEEM) partnered with Ford Land's Energy Efficiency Team to provide an energy efficient high bay lighting design to replace the existing HID lighting in 18 of 22 Ford automotive parts warehouses in North America. The innovative design includes movement sensors and photocells that provide lighting from 11,500+ fluorescent fixtures only when needed in the cumulative 5.0 million square feet of warehousing space. Average reduction in energy use per site exceeds 70% reducing operating cost by \$1.5M annually.

#### 2007 Benefits:

##### Energy Conservation

- Overall lighting energy reduction: 70%
- Annual electricity savings: 20,000 mWh; 2.7 megawatts
- CO2 Emissions Eliminated: 12,800 tons

##### Other Benefits

- Improved lighting levels
- Improved worker comfort due to less heat generated from lighting
- Capital conservation by funding project via energy savings

#### Status:

(2) complete in 2006; (13) complete in 2007; (3) in 1<sup>st</sup> qtr 2008

#### Application:

Warehouse Storage and Industrial Facilities

## Case Study:

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### Overview

Ford Land's Energy Team partnered with New England Energy Management, Inc (NEEM) to replace existing HID lighting with energy efficient lighting at 18 of 22 automotive parts warehouses in North America that provide parts to local dealerships. This project will result in a 70% reduction in energy usage and will save over \$1.5M annually.

### Background

The successful innovative design and professional installation of high efficiency lighting in Ford Hartford, Connecticut parts warehouse in 2005 was the catalyst for the partnership with NEEM.

### Design Strategy

Provide a turnkey design and installation

- Replaced existing HID fixtures with T-8 energy efficient fluorescent multi-lamp fixtures designed by Optimum Lighting. New lamps will maintain 90% of light output over life and innovative "arc" fixture design from Optimum Lighting that improves ballast life by reducing heat in the fixture.
- Optimized advantage of natural light by integrating photocells into 7,800 fixtures where skylights were already part of the building design
- Strategically placed fixtures with integrated occupancy sensors in areas where the occupancy rates fluctuated over the course of the workday
- Replaced incandescent exit signs with LED Exit signs with battery backup

### The Business Case

The \$3.7M project cost required no upfront investment from Ford Motor Company, thereby conserving operating capital for other critical business needs. NEEM worked with numerous organizations to obtain state utility incentives and rebates which offset 15% of the project cost, with the balance implemented via an energy performance contract. All non energy savings such as reduced maintenance costs accrue 100% to the facility.

The installations were accomplished with no disruption of business

### Project scope:

- Replaced 11,500+ Metal Halide HID highbay light fixtures with Optimum Lighting multi-lamp T-8 fluorescent fixtures with GE ballasts; the majority of which are controlled by integrated occupancy-photo cells. Reduced wattage over 50% per fixture
- Replaced 60+ incandescent exit signs with LED exit signs with battery backup reducing energy used by 95%

### Partner

New England Energy Management, Inc  
([www.NewEnglandEnergy.com](http://www.NewEnglandEnergy.com))

### Status

15 of 18 sites compete; 3 sites by 3/2008

### Results and Benefits

The environmental benefit of this project is equivalent to planting 1,989,988 trees each year. Achieving ongoing environmental benefits demonstrates Ford's commitment to implementing "green" policies while enhancing the corporate bottom line. Increasingly, consumers and shareholders prefer to support products and services produced by environmentally conscientious companies.

Environmental Benefits include:

- 70% reduction in lighting energy use: 20,000 mWh
- Electrical demand reduced 35%: 2.7 mW
- 12,800 tons of CO2 emissions eliminated

### Other Benefits

- 15% of project funded with energy incentives/rebates
- Improved lighting levels
- \$1.5M saved annually
- Investigating use of White Tag credits