



2008 New Jersey Clean Energy Small Business Leader of the Year



2008 Projects

Organization

- Energy Kinetics Inc.

Location

- Lebanon, NJ

Project Highlights

- 25,000 watt Array
- Lighting Upgrade
- HVAC Upgrade
- Heat Recovery Ventilation
- Weatherization
- First commercial PV system installed under NJ BPU's SREC-Only Pilot

Project Savings:

Annual Emissions Savings

- 60,011 lbs of CO₂

Annual Energy Benefits

- 34,000 kWh generated power
- Plus 21,000 kWh



Energy Kinetics Inc.

High efficiency heat and hot water systems integrated with solar photovoltaic system, energy efficiency lighting, HVAC upgrades, and energy recovery ventilators.

Project Overview

In order to accommodate the increased demand for the System 2000 product line, Energy Kinetics needed to expand its corporate facility while managing overall energy consumption and costs. The expansion project offered an excellent opportunity to integrate energy efficiency, conservation, and solar power production with our advanced heating technology into a state-of-the-art, high performance facility located in Lebanon, NJ. This multi-faceted project was based on an industry leading, renewable energy solar photovoltaic system used to produce electricity for manufacturing and is the first project completed under the SREC—Only Pilot Program in New Jersey.

This project also included energy efficient upgrades to lighting (including motion sensors and natural lighting designs), HVAC systems with high efficiency motors, heat recovery ventilators, programmable thermostats, plus insulation and weatherization efforts. The results demonstrate the benefits of combining efficiency, conservation and renewable energy.

Benefits

Application can be relatively quick, extremely effective and will reduce operating budgets. Building envelope, lighting, and HVAC modifications may also be easily implemented during routine equipment and facilities life-cycle upgrades. These upgrades have nominally higher initial costs than less efficient options, but they provide a rapid return on investment for the associated incremental cost increases.

The environmental impact and cost savings are relatively predictable and an appropriate analysis can prioritize efforts for the best return based on available funds, savings, environmental impact, and corporate philosophy.

Accomplishments

This project has allowed Energy Kinetics to expand on its philosophy of renewable energy and conservation of fossil fuels into areas beyond heating and hot water equipment production. Many Americans believe they cannot afford solar electric power. By selecting products from Energy Kinetics, Americans support lower manufacturing green house gas emissions and a reduced carbon footprint. The consumer is not only choosing a heating and hot water system made with renewable energy, but their own carbon footprint is reduced through lowered annual fuel consumption. Using clean, renewable solar energy in the manufacturing process of System 2000 boilers, homeowners and business owners conserve energy currently embodied in oil and gas and extend the efficient use of fossil resources.

It's got to be
**SYSTEM
2000**

Energy Efficiency, Renewable Upgrades and Best Practices

| Area | Upgrade | Estimated Savings |
|---|---|--|
| Office Lighting Lights are on 10 hours per day and 50 weeks each year | 40 Watt Fixture: 20 Watt x (2) T8 Bulbs with reflective fixture (140 lumens/watt) Original 160 Watt Fixture: 40 Watt x (4) T12 Florescent Blubs (75 lumens/watt) | About 300,000 Watts and 330 lbs of greenhouse gas emissions per fixture per year |
| Upgrade Heat and Hot Water System | 87% Efficient low mass boiler with Energy Recovery savings vs. a 20 year old boiler <i>Note: For example only, System 2000 is part of the original building installation</i> | 20% to 40% reduction in heating fuel consumption and associated GHG emissions Comparable or improved comfort levels |
| Building Weatherization Reduce heating and cooling loads | Identify areas requiring improvement, add insulation, seal cracks and openings; add heat recovery ventilators for controlled air changes | Up to 30% Reduced Heating and Air Conditioning Costs and GHG Emissions ...plus improved comfort |
| Upgrade Air Conditioning | 16 SEER with high efficiency motors and heat recovery ventilators vs. older 10 SEER air conditioners | 20% to 40% reduction in air conditioning and make-up air related energy consumption and associated greenhouse gas emissions |
| Solar Photovoltaic Power | 25,000 Watt array | Generate approx. 34,000 kWh per year plus SREC credits and associated GHG emissions |

Roger Marran, president of Energy Kinetics explained, "There is an incredible opportunity to reduce energy consumption and greenhouse gas emissions when we combine the powerful tools of renewable energy, efficiency improvements, and conservation. In addition to using System 2000 as our heat and hot water system, we applied more than 10 separate technologies and improvements. These technologies can benefit any home or business and can be prioritized based on a need to replace older equipment, expected return on investment, the desire to reduce energy consumption and greenhouse gases, or considerations for the specific building. In fact, energy reductions of over 50% are often affordable and achievable through a combination of high performance heating equipment and building envelope or weatherization efforts."

This project demonstrates broad, fiscally responsible approaches to sustainability and energy conservation which may be applied to buildings and businesses of all sizes. Energy Kinetics prioritized these specific areas based upon the expected returns on investment, environmental impact, capital and operating budgets and a needs-based analysis.

"In today's business climate, it is no longer a question of whether you can afford to invest in clean technology. The question is can you afford not to," added NJBPU President Jeanne M. Fox. "Clearly, the outstanding projects recognized by the Clean Energy Leadership Awards demonstrate that their developers 'get it.' Investing in a cleantech economy is not just good for the environment, it also is good for business."

As the Clean Energy Business Leader of the Year, Energy Kinetics' project drives the reduction of New Jersey's power consumption through the combined solar and building efficiency upgrade project. Through implementation of our project we have expanded on the existing environmental benefits of producing energy saving products using renewable energy. The compound effect has an incredibly powerful result on reducing fossil fuel dependence and our nation's carbon footprint. As an ENERGY STAR® partner, this project is closely aligned with our corporate philosophy and is a smart business plan for our growing company.

True or False:

Energy use of the average U.S. home creates almost twice the greenhouse gas emissions as the average car.

True !

The average home releases more than 24,000 pounds of carbon dioxide (CO₂) annually, almost twice as much as a typical car (11,500 pounds of CO₂ emissions), estimates the Environmental Protection Agency. This is due to emissions produced by power plants to generate the electricity used to run modern homes - plus home emissions from such things as oil and gas-fired heat and hot water systems.