



LED Energy Efficiency Solutions

by

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GreenRG Management LLC

~ Our Mission ~

- ☑ **“Provide Industry with Energy Efficient - NegaWatt Solutions”**

Energy Efficient Building Technology:

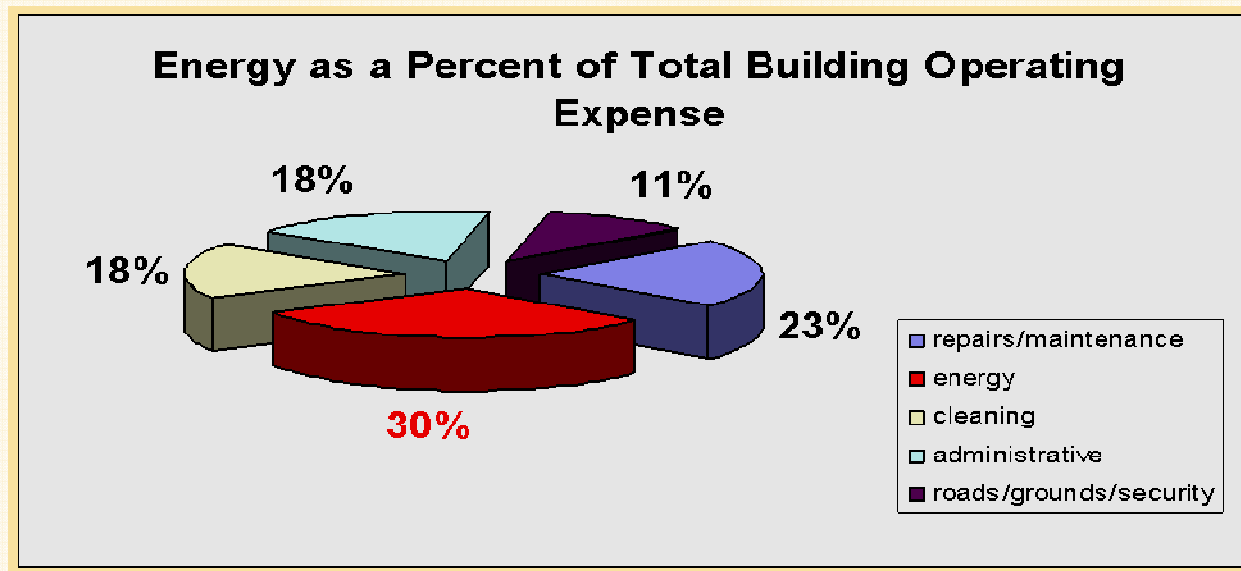
- ✓ **Dimmable LED Lighting Technology (aka Solid State Lighting)**
- ✓ **Daylight Harvesting – Combining LED & Lighting Control Systems**
- ✓ **Radiant Barriers using Window Film Insulation**
- ✓ **DOE Approved Software (DOE-2) to measure Energy Efficiency**
- ✓ **Monetize the Buildings Energy Efficiency through Exchange Emission Reduction Offsets (CCX Exchange traded)**

Developed for the U.S. Department of Energy by Lawrence Berkeley National Laboratory's Simulation Research Group
DOE-2 is a computer program for the design of energy-efficient buildings.

Building Energy Efficiency

U. S. Commercial Office Building Facts

- Size of commercial building energy efficiency retrofit market - Est. at \$400 billion
- Forecast of annual energy efficiency retrofit revenue - Est. at \$6.6 billion by 2013
- Lighting Energy consumption – Est. 22% of the total electricity generated in U.S.
- Commercial Buildings are responsible for 38% of U.S. CO₂ emissions
- HVAC Cooling Load from – Window Solar Heat 32% & 42% Lighting (DOE)



Data based on 2002 BOMA Experience Exchange Report (Average of Urban & Suburban Non-Government Buildings)

Building Energy Efficiency

“NegaWatt” Solutions

- **Dimmable LED lighting systems reduce:**
 - Lighting electricity consumption by 50% to 85%
 - HVAC cooling load, bulb replacement and related maintenance costs
 - Dimming LED’s can last 50,000 to 150,000 hours
 - LED’s offer a healthier light versus fluorescents without: flickering, noise, Mercury, lead, UV rays. LEDs are also landfill friendly and fully recyclable
- **Window Film “Daylight Harvesting”:**
 - Maximize use of natural light (Daylight Harvesting) with Dimming LEDs
 - Reduces radiant heat from window and HVAC cooling demands
 - Reduces harmful UV and infrared light
 - Provides the occupants with a year round outside view without glare

Building Energy Efficiency

The “NegaWatt” Solution Will:

- **Reduce building Lighting Energy Consumption by 50% - 80%**
- **Reduce building HVAC cooling load from window and lighting**
- **Lower building maintenance & labor costs**
- **Remove pollution (no Mercury, Lead, etc.)**
- **Achieve LEED Certification Credits for Green Building Design**
- **Reduce building Carbon footprint – potential to create Exchange Emission Reduction Offset Credits**



Lighting Energy Efficiency

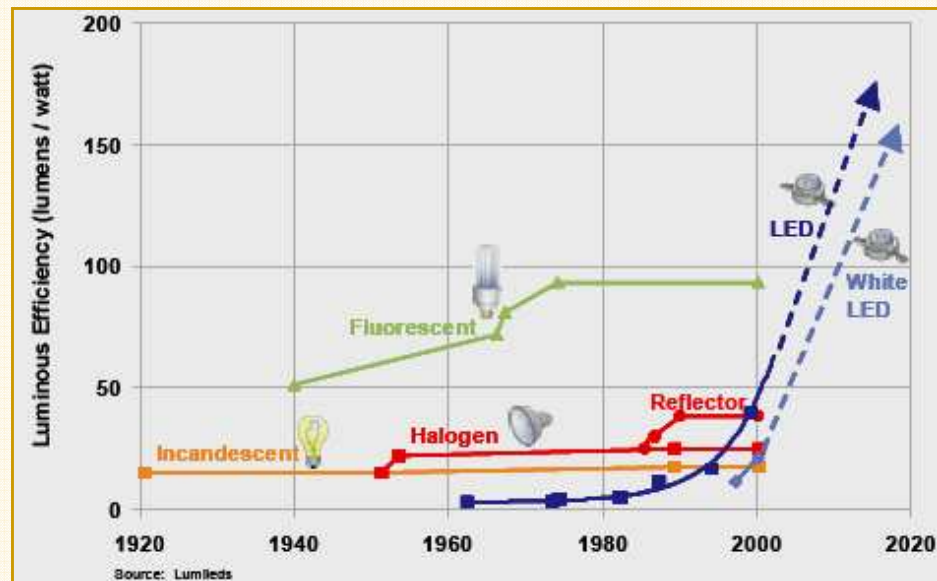
Market Drivers for LED Lighting

➤ Unprecedented Energy Efficiency

- LEDs reduce energy consumption by up to- 80%
- LEDs last up to 10 times longer
- LED white-light now surpass the efficiency of fluorescent lamps
- No Mercury or Lead



U.S. Bans 100 Watt
Incandescent Bulb
Starting 2012



LED's - Positioned for Success with Innovations

Leading Manufacturers with
100 patents or patents pending



LED Technology Leaders in:

- ✓ LED Indoor & Outdoor Fixtures
- ✓ Lighting Controls
- ✓ Smart Bulbs:
 - Adjustable Color
 - Adjustable Wattage
 - Intelligent Communication
- ✓ Patented Technologies
- ✓ Where Possible
Products are >

