

United States  
Environmental Protection  
Agency

Air and Radiation  
(6202J)

EPA 430-R-93-005  
March 1993

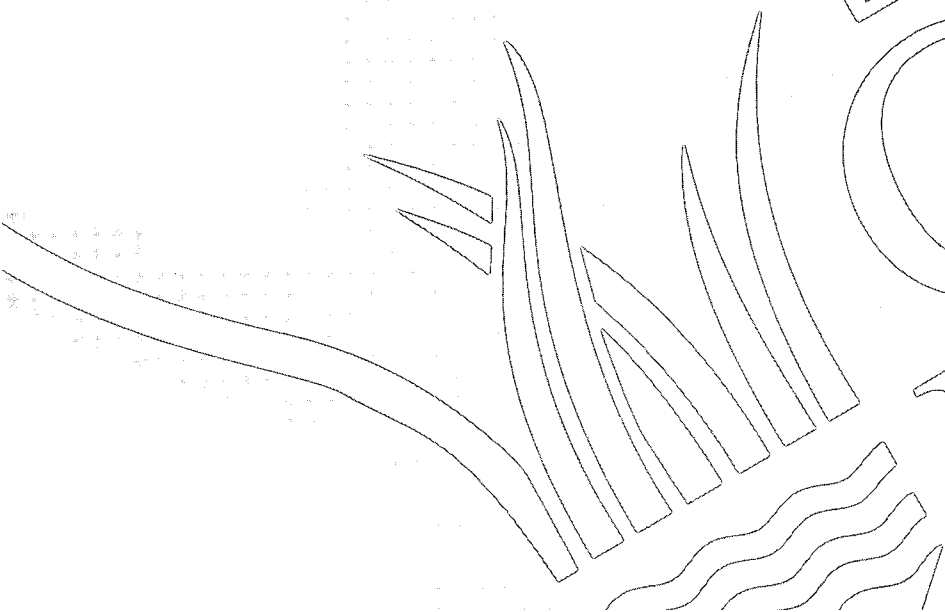
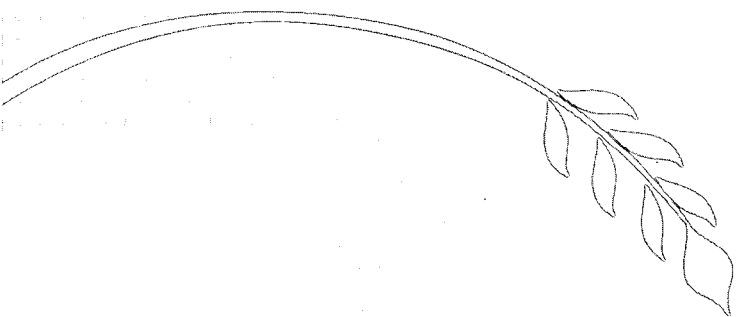
c.2



# Green Lights The Second Year



EPA  
Green  
Lights



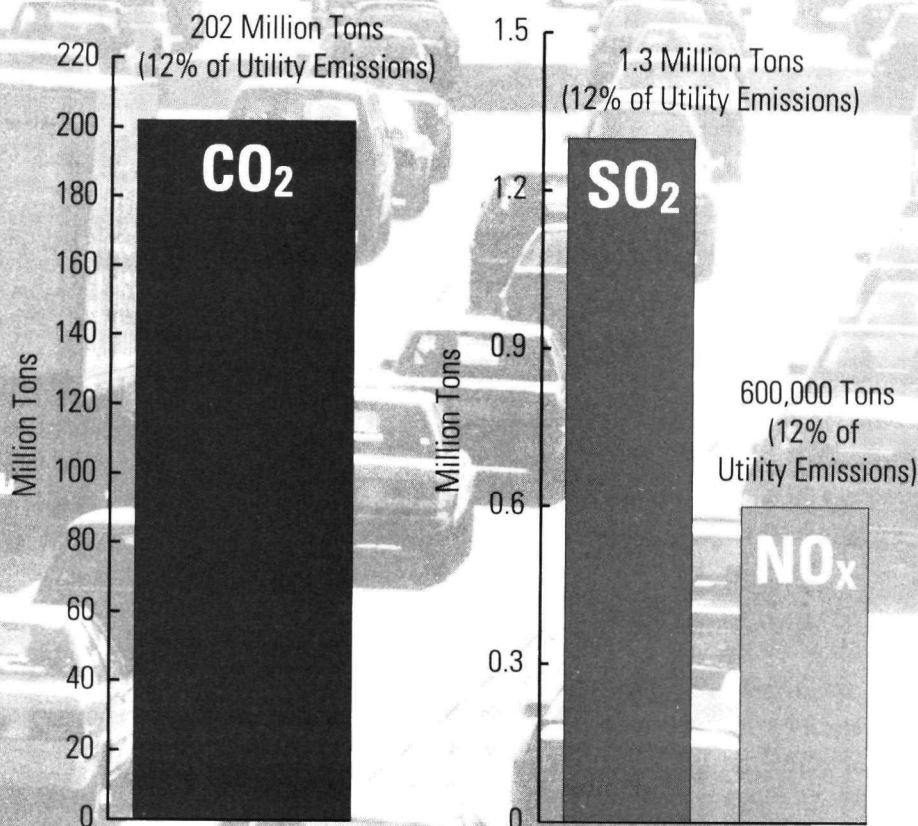
EPA

Green  
Lights

# WHAT IS GREEN LIGHTS?

Launched in January of 1991, Green Lights is a voluntary, non-regulatory program designed to reduce pollution through the initiative of organizations across the country. Green Lights aims to engage the free market in an effort to promote profitable investment in energy-efficient technologies. Green Lights participants share an interest in reducing air pollution through the use of energy-efficient lighting. They include major corporations; state, city, and county governments; environmental organizations; electric utilities; and the major members of the lighting industry. As part of Green Lights, these organizations have a profound impact on the environment—their participation significantly reduces pollution through energy efficiency.

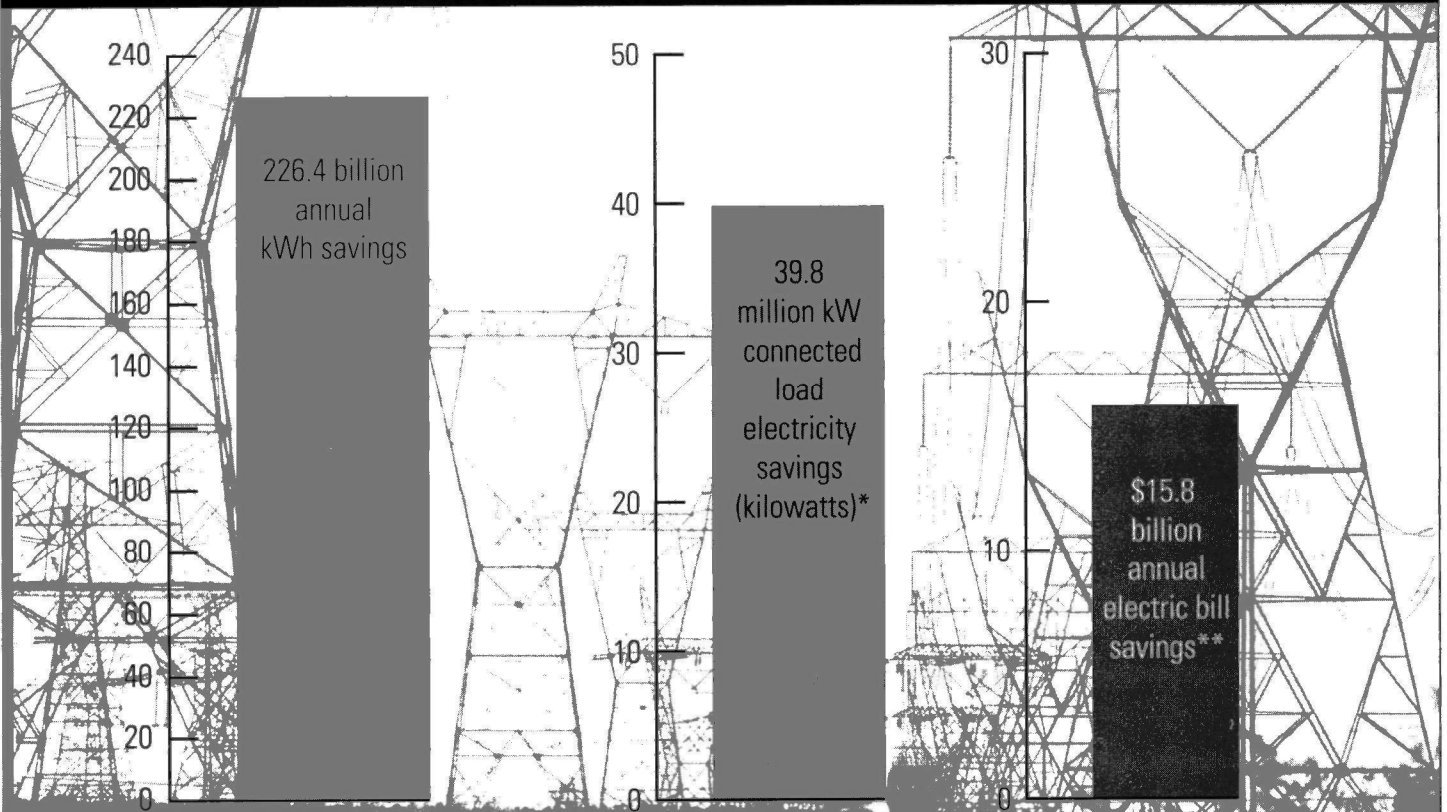
## GREEN LIGHTS POLLUTION PREVENTION POTENTIAL



## POLLUTION PREVENTION...

*If energy-efficient lighting were installed everywhere profitable, the resulting energy savings would prevent annual emissions of carbon dioxide equivalent to removing 44 million cars from the road—one-third of the U.S. fleet.*

## GREEN LIGHTS ENERGY SAVINGS POTENTIAL



\* Assumes connected load reduction has a 65 percent capacity factor

\*\* Calculated using \$0.7 per kWh saved

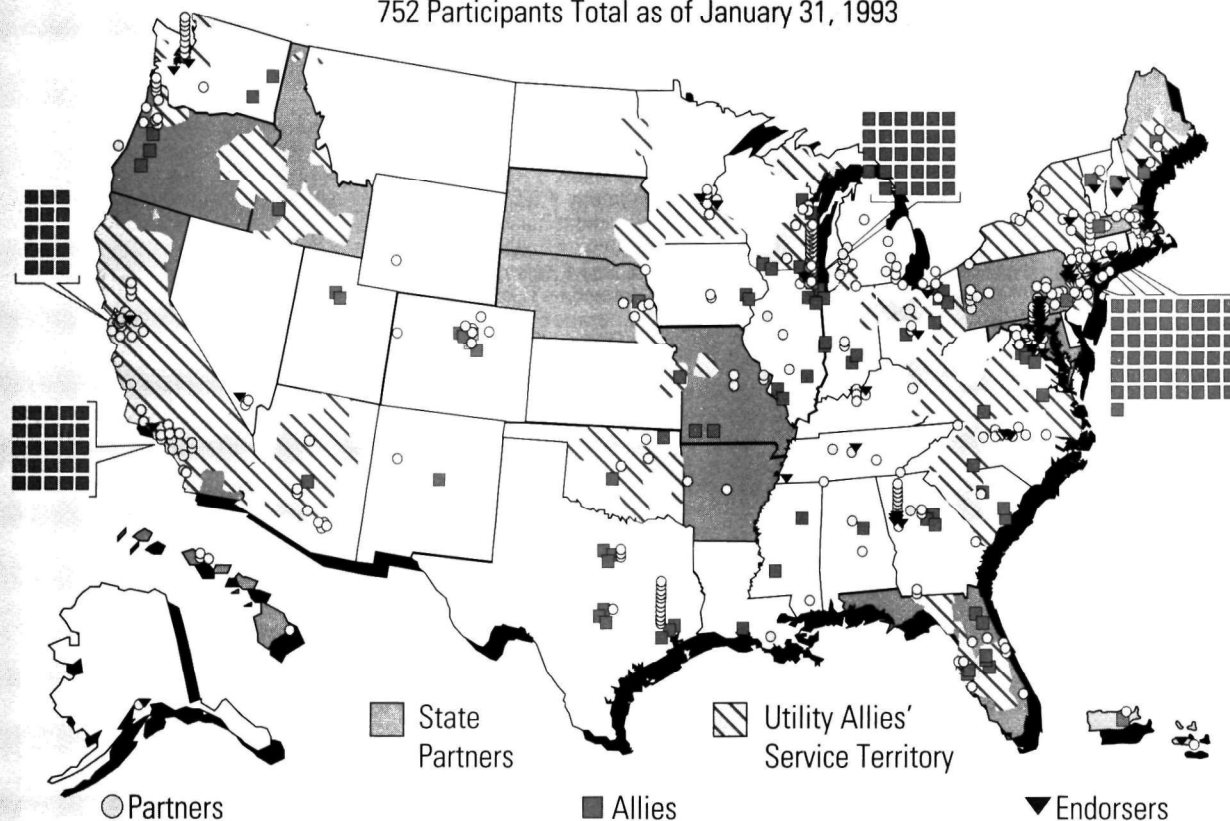
## ***...THROUGH ENERGY EFFICIENCY***

*By the year 2000, full implementation of Green Lights would save 39.8 million kilowatts of electricity, preventing \$59.7 billion in need-less power plant investments.*



## HEADQUARTERS OF GREEN LIGHTS PARTICIPANTS

752 Participants Total as of January 31, 1993



Organizations that agree to survey and install energy-efficient lighting in at least 90% of domestic facilities.

Lighting manufacturers, lighting management companies, and electric utilities that agree to install energy-efficient lighting, but also agree to work with EPA to promote the benefits of energy-efficient lighting to their customers.

Professional associations, academies, boards, institutes, or societies that agree to promote the concept of energy-efficient lighting to their constituents.

*Green Lights participants include multi-national corporations, as well as regional and local organizations across the country. A number of state, city, and county governments are also members.*

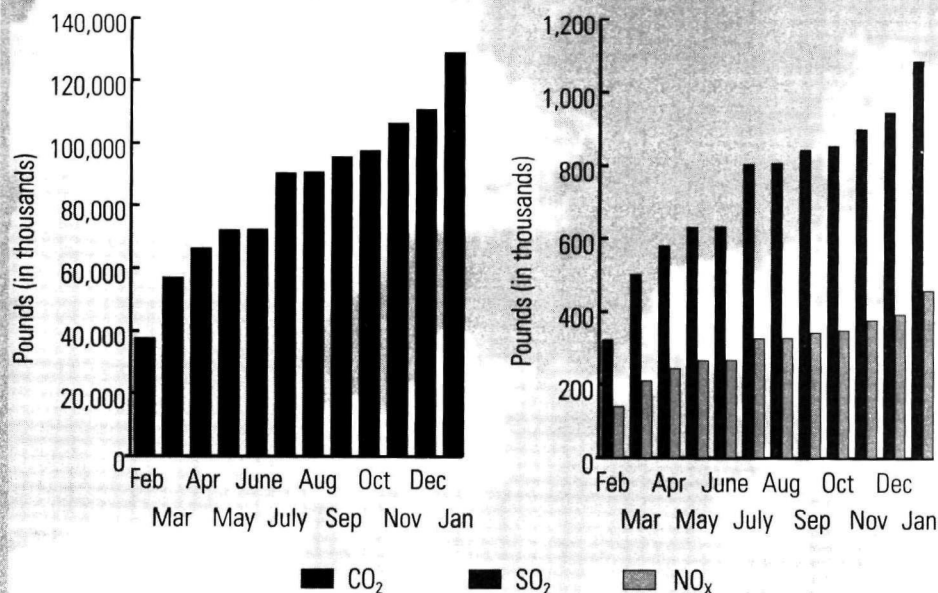
**CORPORATE PARTNERS** • 3M • A & C Enercom • AES Corporation • ALCOA • ARCO • Abbott Laboratories • Alamance County Schools • Albany General Hospital • Allergan • Alliance for Environmental Education • Alliance to Save Energy • Alta Bates Medical Center • American Council for an Energy Efficient Economy • American Public Power Association • American Express Company • American Standard, Inc. • Amoco Corporation • Aromas-San Juan Unified School District • Ashland Oil, Inc. • Automatic Data Processing, Inc. • Aveda Corporation • BMG/RCA Music • Baldor Electric Company • Bancorp Hawaii, Inc. • Bank of America Corporation • Baxter Healthcare Corporation • Bay Area Hospital • Bear Stearns Companies, Inc. • Bechtel • Bell Atlantic Corporation • Bell Communications Research • Blue Cross & Blue Shield Mutual of Ohio • Boeing • Boulder Valley Public School District • Brandeis University • Brooklyn Union Gas Company • Broward Community College • Brown University • Browning Ferris, Inc. • The Bruce Company • COMPAQ Computer Company • CTEC Corporation • California State University • Camp Dresser & McKee, Inc. • Canyon Ranch • Cape Canaveral Marine Services, Inc. • Cardolite Corporation • Career Track • Carnegie Mellon University • The Oliver Carr Company • Catalyst Group • Caterair International Corporation • Center for Applied Engineering, Inc. • Central Carolina Bank • Central Florida Community College • Charming Shoppes, Inc. • Chemical Bank • Cherry Hill Board of Education • Chevron • Childhelp USA • Children's World Learning Centers • Cibola County Schools • Citicorp/Citibank • Citizen's Photo • City University of New York • Cleveland State University • Club Corporation, International • Colonial Pipeline • Colorado State University • Columbia University • Continental Insurance • Coolfont Resort • Cosmair, Inc. • Cracker Barrel Corporation • Crestar Bank • DMB Associates, Inc. • Data General Corporation • Defender Services, Inc. • Dexter Corporation • Digital Equipment Corporation • Dock Resins Corporation • Downtown Plaza Towers Associates • Dresser Rand • Dura Pharmaceuticals • Duracell USA • EJ Brach Corporation • Earth Care Paper • Earth Share • Eaton Corporation • Electric Power Research Institute • Eli Lilly & Company • Elkhart General Hospital • Enron Property Company • Environmental Defense Fund • Environmental Law Institute • Facility Management Consultants • First Data Corporation • First Union National Bank • Flamingo Hilton • Flynn Lumber & Supply Company, Inc. • Fred Meyer, Inc. • Friend Public Schools • HB Fuller Company • GM Popkey Company, Inc. • GTE • General Dynamics Corporation • Genovese Drug Stores, Inc. • Georgia Institute of Technology • Gerber Products Company • Gibson Speno Companies • Gillette Company • Godfrey Reality • Goodyear Tire & Rubber Company • Government Development Bank for Puerto Rico • Grainger • Graphics Technology International • Gross Enterprises • Grumman Corporation • Hahnemann University • Harris Corporation • Hasbro, Inc. • Haworth, Inc. • Herman Miller, Inc. • Hewlett-Packard Company • Highlands Regional Medical Center • Hilton at the Circle • Hoechst Celanese • Hofstra University • Home Depot • Honeywell, Residential & Building Control Division • Hope Network • Horton Memorial Hospital • Hotel San Remo - Ramada • Humana, Inc. • Huntsville City Schools • ICF International • INOVA Health System • IPS Electric & Midwest Gas • ITT Corporation • Intergraph Corporation • International Institute for Energy Conservation • International Technology Corporations • Interstate Hotels Corporation • Irish Boat Shop • Izaak Walton League • JE Seagram Corporation • Jaakko Poyry • Jackson State University • Jay Peak Ski and Summer Resort • Jewish Home for the Elderly • Joan Fabrics Corporation • Johns Hopkins/SAIS • Johnson & Johnson • Johnson Controls World Service • Kerr-McGee Corporation • KeyCorp • KinderCare Learning Centers • Kinko's Service Corporation • Kolar Management, Inc. • LL Bean, Inc. • Leon County School Board • Liz Claiborne, Inc. • Lockheed Corporation • Longs Drug Stores Corporation • Louisville & Jefferson County Metro Sewer District • Louisville Resource Conservation Council • Lyondell Petrochemical Company • M-TEC Enterprises • MagneTek, Inc. • Marriott Corporation • Martin Marietta Corporation • Maryland Science Center • Massachusetts Institute of Technology • Mattel, Inc. • Maytag • McKeesport Hospital • McNeil Real Estate Management, Inc. • Meade Group • Meadowcreek • Medcenter • Medical College of Ohio • Melville Corporation, Melville Realty • Memorex Telex • Memorial Hospital of Lafayette County • Mercer University • Methodist Hospitals of Memphis • Metropolitan Water Reclamation • Mobil Land Development Corporation • Monsanto Company • Motorola, Inc. • Mt. Bachelor • NBD Bank, NA • NBS Consultants Inc. • NYNEX Corporation • National Semiconductor Corporation • National Service Industries, Inc. • National Westminster Bancorp • National Wildlife Federation • Natural Resources Defense Council • Nature Conservancy • Nestle USA • New Canaan YMCA • New York Marriott Marquis • Nike, Inc. • North American Philips Corp • North Carolina Alternative Energy • North Ottawa Community Hospital • Northeast Bancorp/Union Trust • Northern Arizona University • Northern Illinois Medical Center • Northwest Georgia Regional Hospital • Northwood School District • OECO Corporation • Ocean County College • Odyssey of America • Okaloosa-Walton Community College • Old North Church • One Marconi Place, Inc. • Oxford Properties Florida, Inc. • Palmer Bellevue Corporation • Pasadena City College • Perry Drug Stores • Phillips Petroleum Company • Phoenix Home Life Mutual Insurance Company • Pima Community College • Planned Parenthood of South Central Michigan • Pocono Environmental Education Center • Polaroid Corporation • Proper Management • Provident Life & Accident Insurance Company • Public Citizen • Quad Graphics, Inc. • Ravenswood Hospital Medical Center • Redlands Federal Bank • Rhone-Poulenc Inc. • Richman Gorman, Inc. • Ricoh Electronics, Inc. • Ritz-Carlton Hotel Company • SAIC • SCT Yarns, Inc. • SUNY at Stony Brook • Santa Cruz Valley Union High School • School Administrative Unit #51, New Hampshire • School Board of Sarasota County • Sealed Air Corporation • Service Merchandise • Seventh Generation, Inc. • Shell Oil Company • Siemens Corporation • Sisters of St. Francis of Sylvania, OH • Skeff Distributing Company, Inc. • Sony Corporation of America • St. Elizabeth Medical Center • St. Michael Hospital • St. Paul Fire and Marine Insurance Company • Stamats Communications, Inc. • Standard Microsystems Corporation • State Farm Mutual Automobile Insurance • Steelcase, Inc. • Straub Clinic and Hospital, Inc. • Student Loan Marketing Association • Sun Company, Inc. (R&M) • Super Valu Stores, Inc. • Supermarkets General Corporation • Tampa General Hospital • Texaco Inc. • Texas Air Control Board • Timberland Company • Toshiba America, Inc. • Trade Press Publishing Corporation • Transamerica Corporation • Tucson Solar Village • Tufts University • Turner Broadcasting System, Inc. • US Bancorp • US West, Inc. • USF & G • USX • Underwriters Laboratories, Inc. • Union Camp Corporation • Union College • Union of Concerned Scientists • Unity College • University Corp. for Atmospheric Research • University of Florida • University of Georgia • University of Illinois, Chicago • University of Miami • University of Redlands • University of Rochester • University of Southern Maine • Van der Horst USA • Wachovia Corporation • Walton Monroe Mills, Inc. • Warner-Lambert Company • Washington Times • Waste Management, Inc. • West Chester University • Western Digital Corporation • Westin Hotels & Resorts • Westinghouse Electric Corporation • Westminster College • Whirlpool Corporation • White Castle Systems, Inc. • Wolverine World Wide • Woodloch Pines • World Resources Institute • Xerox Corporation • Yellow Freight Systems, Inc. • Yosemite Community College • Zurn Industries, Inc. • **SUBSIDIARY ORGANIZATIONS** • ANR Pipeline Company • Alaska Airlines, Inc. • American & Efird, Inc. • Aristech Chemical Corporation • BP Exploration, Inc. • BP Exploration-Alaska • Bath Iron Works Corporation • BellSouth Telecommunications • Carolina Freight Carriers Corporation • Carrier Corporation North American Operations • Chem-Nuclear Geotech • Colonial Pacific Leasing • Dean Witter Realty • Domino's Pizza Corporation • Energy User News • First Data Resources, Inc. • First National Bank of Chicago • GPU Service Corporation • Geneva Pharmaceuticals, Inc. • Home Box Office, Inc. • Horizon Air Industries, Inc. • IMS America Ltd. • Jantzen, Inc. • Jewel Food Stores • Karastan Bigelow • Kenyon Oil Company Inc. • Lone Star Steel • Powell Electrical Manufacturing Company • Preston Trucking • Reliance Standard Life Insurance • Solar Turbines, Inc. • Solvay Minerals, Inc. • Southern California Gas Company • Southwire Company • Thrift Drug Company, Inc. • Viskase Corporation • Walt Disney Company • Divisions • CIBA-GEIGY Pharmaceuticals Division • Cox Newspapers, Division of Cox Enterprises • Macwhythe Company • **GOVERNMENT PARTNERS** • State of Arkansas • State of California • State of Florida • State of Hawaii • State of Idaho • State of Maine • State of Maryland • The Commonwealth of Massachusetts • State of Missouri • State of Nebraska • State of Oregon • The Commonwealth of Pennsylvania • State of South Dakota • Virgin Islands, Government of U.S. • City of Azusa, CA • City of Houston, TX • City of Naperville, IL • City of Oxnard, CA • City of Portland, OR • City of Tallahassee, FL • Town of Northwood, NH • Broward County, FL • Dade County, FL • Douglas County, OR • Hillsborough County, FL • Leon County, FL •

# WHAT'S IN IT FOR PARTICIPANTS?

Green Lights participants understand that substantial pollution reductions are possible through profitable investments in energy-efficient lighting. By treating lighting as an investment opportunity rather than overhead, Green Lights participants realize average returns on their lighting investments of over 25 percent. These organizations are reducing their lighting electricity bills by 50 percent or more, while maintaining or improving lighting quality. By signing on to this innovative public-private sector partnership, organizations of all kinds are reducing pollution, saving energy, and enhancing their image—a mutual commitment to the environment that results from a single stroke of a pen.

## GREEN LIGHTS POLLUTION PREVENTION AS OF JANUARY 31, 1993

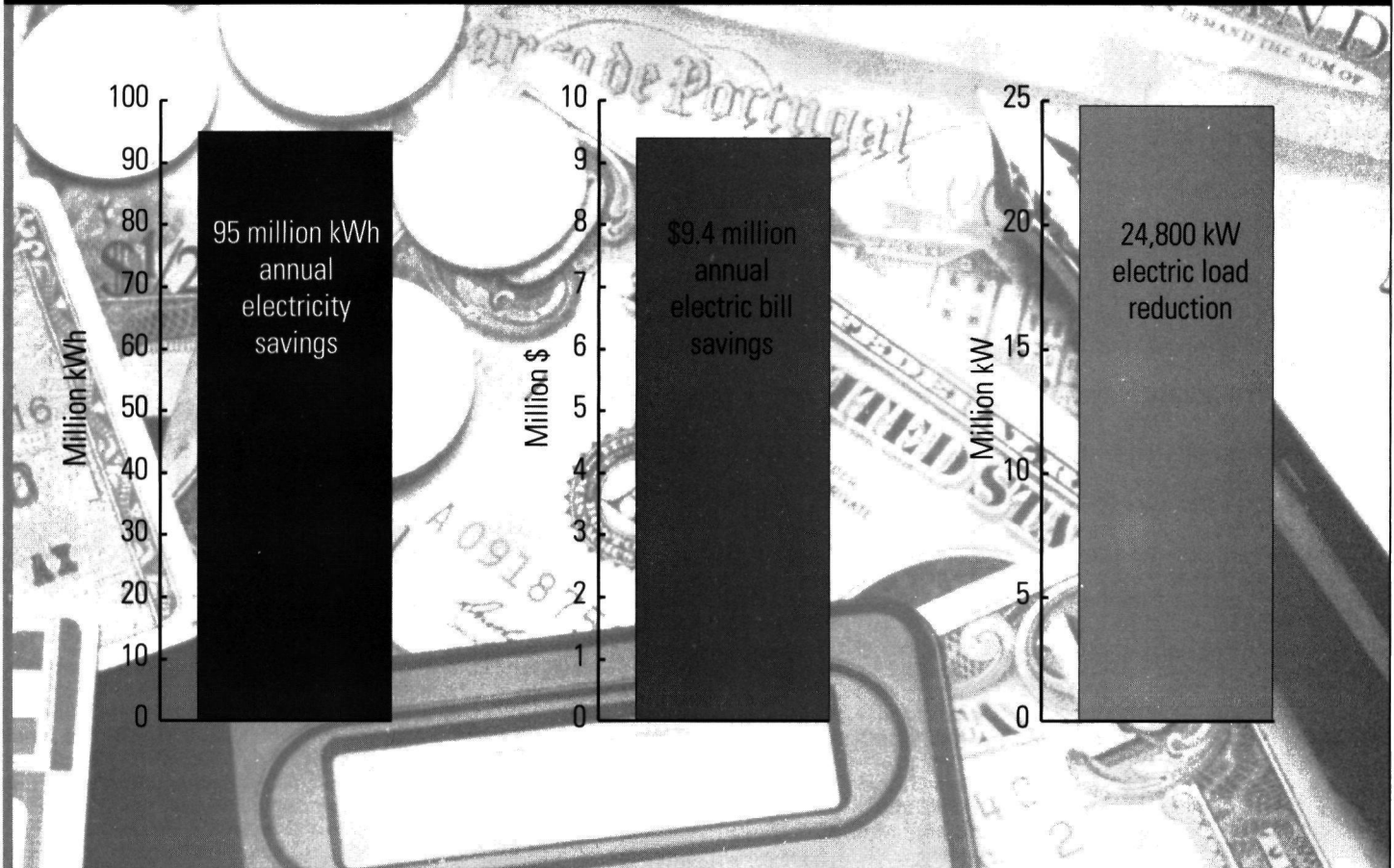
### ANNUAL REDUCTIONS FROM COMPLETED UPGRADES



## POLLUTION REDUCTIONS...

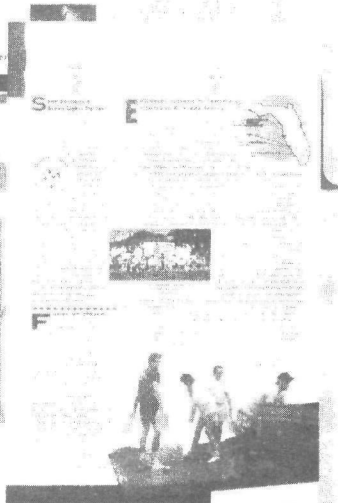
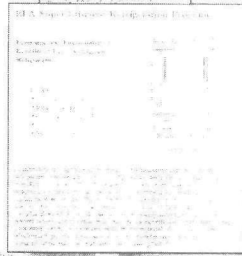
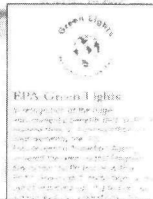
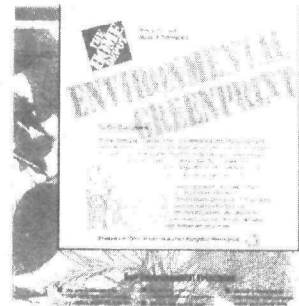
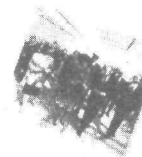
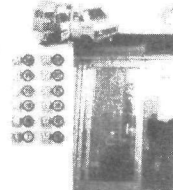
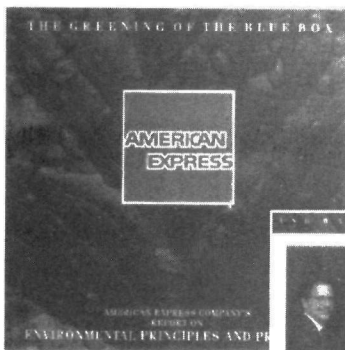
*Over 200 participants have reported significant progress on lighting upgrades, with close to one-quarter of their total square footage currently being upgraded. Investment in these new lighting technologies is already dramatically reducing air pollution.*

## GREEN LIGHTS ENERGY SAVINGS AS OF JANUARY 31, 1993



### **...ENERGY SAVINGS**

*Green Lights participants are already avoiding over 95 million kWh annually—an energy savings that equals \$9.4 million in avoided electricity costs. And most participants are only in the earliest phases of their implementation.*



# ...AN ENHANCED IMAGE

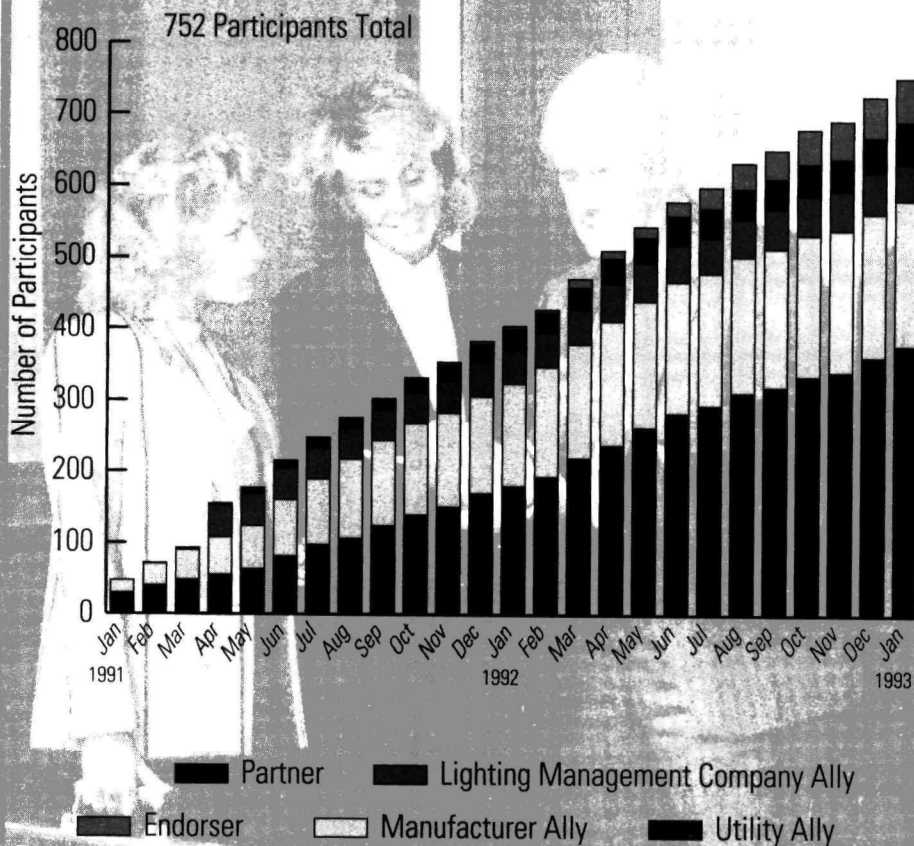
Many Green Lights participants successfully promote the benefits of energy-efficient lighting by combining progress on implementation with public recognition initiatives announcing recent upgrade performance.



# WHAT ARE GREEN LIGHTS PARTICIPANTS ASKED TO DO?

All Green Lights participants sign a "Memorandum of Understanding" (MOU) with EPA, agreeing to (1) survey all of their domestic facilities, (2) upgrade their lighting where profitable, and (3) complete their lighting upgrades within 5 years. By signing this agreement, participants also agree to assign a Green Lights implementation manager responsible for ensuring timely implementation of lighting upgrades. Finally, participants agree to work with EPA in publicizing the benefits of energy-efficient lighting. Green Lights does not require participants to install specific lighting technologies. To meet their MOU obligation, participants invest in whatever technologies maximize energy savings while maintaining or improving lighting quality.

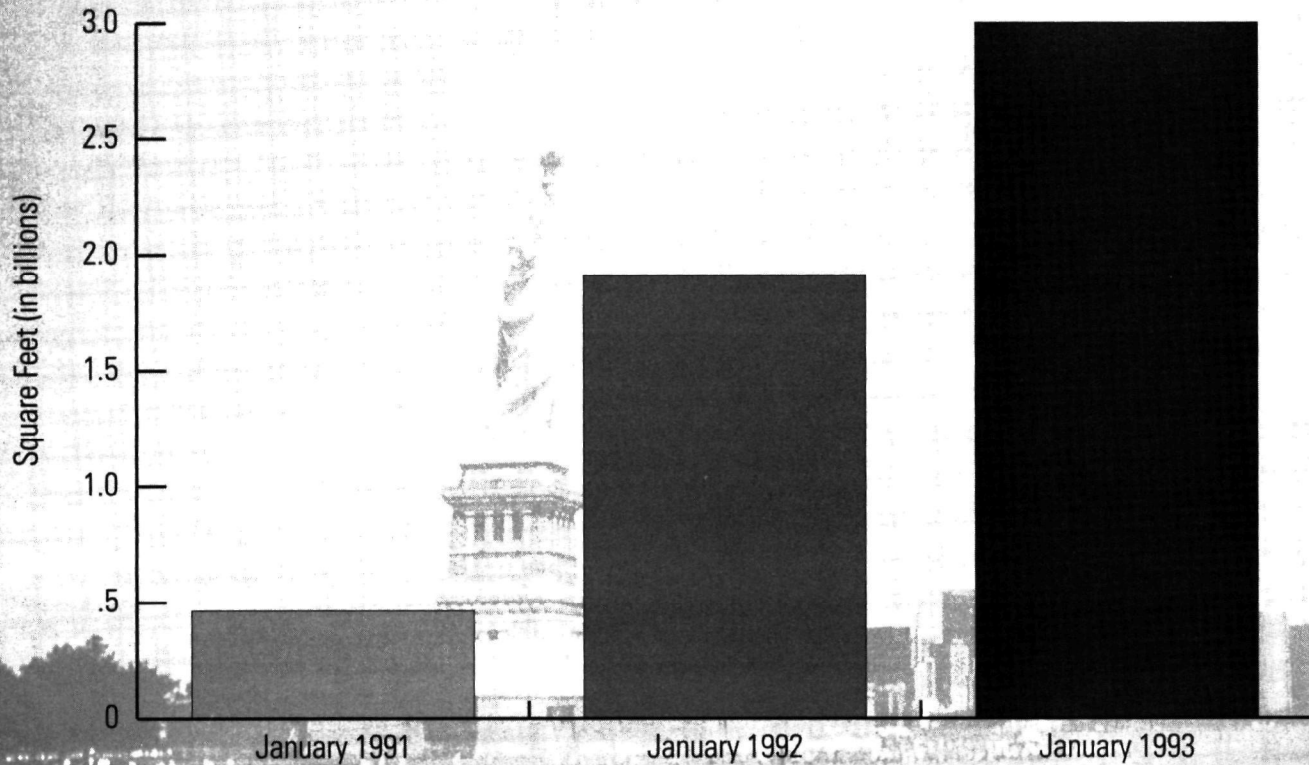
## GREEN LIGHTS PARTICIPANTS



12 percent of the "Fortune 1000" has signed the Green Lights "Memorandum of Understanding."



## GREEN LIGHTS MEMBERSHIP IN SQUARE FEET



## ***SURVEY THEIR DOMESTIC FACILITIES...***

*Green Lights participants have committed to upgrade a total of 3 billion square feet of facility space—more than 2 times the total office space of New York, Los Angeles, and Chicago combined.*



## American Express Company

When American Express is through implementing its Green Lights program, the financial services company will have relamped 11 million square feet of existing office space around the country, plus any new construction and future leased space, adding about \$1.5 million per year in electricity savings to its bottom line. As one of the first participants, American Express signed the Green Lights "Memorandum of Understanding" (MOU) in February 1991. To date, the company has relamped over 2 million square feet of office space in five buildings: two of its Shearson Lehman Brothers Inc. offices in New York City; two First Data Corp. buildings in Omaha, Nebraska; and the former headquarters of the Minneapolis-based IDS Corp. The first and largest upgrade completed was at Shearson Lehman Brother's 1.4-million-square foot headquarters building on Greenwich Street in New York City. Original lighting included 31,000 T-12 fluorescent lamps, with about 17,000 core and coil magnetic ballasts in 1 x 4 overhead fixtures. Each fixture was upgraded to include T-8 lamps and electronic ballasts—a change that was made during evening hours and took about 4 months. Total up-front costs came to \$710,000, but the project had an internal rate of return of 38 percent, excluding rebate. As a result of this upgrade, American Express now saves 519.9 kilowatts of electricity, or \$280,000 per year in electricity bills, and prevents the emission of over 5 million pounds of CO<sub>2</sub>, 15 million grams of SO<sub>2</sub>, and 5 million grams of NO<sub>x</sub> each year. The company also received a \$450,000 rebate from Consolidated Edison. The next step for American Express is to upgrade the company's 2.2 million-square-foot corporate headquarters in New York City's World Financial Center, for which T-8 lamps and motion sensors are already in stock. Company-wide, American Express expects to save 15 million kilowatt-hours per year, a savings that will result in a \$1.5 million additional profit for the company every year.



## Browning Ferris Industries

Houston-based BFI began its upgrades where it counts most—the company's 2-building, 545,000-square-foot Houston executive offices. Approximately 3,300 3-lamp, 40-watt fluorescent fixtures with hybrid ballasts were replaced on 9 of the headquarters' 14 floors. Lobbies, conference rooms, and elevator lobbies were relamped with fixtures containing two T-8 lamps along with a tandem-wired electronic ballast and specular silver reflector, a combination that resulted not only in a longer life for both bulbs and ballasts, but also provides better color rendering than before. Additionally, 350 75-watt incandescent lamps were replaced with 15-watt compact fluorescents. Total cost of the upgrade came to \$210,000. The compact fluorescents save 24,000 kilowatt-hours per year—or approximately \$1,400 in decreased electricity costs and an additional \$7,000 as a result of greater longevity. Similarly, the T-8's save approximately \$84,000 per year in electricity costs, plus another \$15,000 in lamp replacements. The project has an internal rate of return of 51 percent, excluding rebate. Electricity demand has been cut in half from 360 to 140 kilowatts, with the same 72 footcandles of light at desk level. In addition to energy savings, the project benefited from a \$16,000 rebate from Houston Power and Light and prevents the emission of over 1 million pounds of CO<sub>2</sub>, 1.4 million grams of SO<sub>2</sub>, and 1.4 million grams of NO<sub>x</sub> each year. When upgrades are complete in all 400 corporate facilities, BFI expects to add \$1.5 million in profit to its bottom line as a direct result of Green Lights.



## Columbia University

According to Lindsay Audin, Columbia University's manager of energy conservation, "every incandescent bulb you replace with a compact fluorescent is the equivalent of planting 6 to 10 trees." Mr. Audin says that "the typical American fir tree takes in and fixes 26 pounds of carbon dioxide per year, and for every kilowatt-hour saved, you avoid creating 1.5 pounds of carbon dioxide." In fact, Audin estimates he's already planted—figuratively—over 200,000 trees, and will plant the equivalent of 1,000 acres by the time he's completed relamping the 5 million square feet of space on the university's Morningside Heights campus, located on New York City's Upper West Side. The first project was at the 420,000-square-foot School of International Affairs. Original lighting included 80 percent fluorescent lighting fixtures with magnetic ballasts—all covered with acrylic prismatic lenses. These were replaced with T-8 lamps, reflectors, and electronic ballasts. Specially designed parabolic louvers running perpendicular to the lamps were also installed to minimize the amount of light escaping each end while maximizing light emissions from the side. Furthermore, in hallways, every second or third fixture was removed and replaced with a ceiling tile. Finally, 100- and 150-watt incandescent flood lights installed in cans—as high as 20 feet in lecture halls and lobbies—were replaced with 28-watt compact fluorescents which fit into specially designed retrofit reflectors. Although 400 were installed in early fall 1990, only one has burned out and light intensity has increased from 6-8 to 14-20 footcandles. This first upgrade project reduced total peak demand from 1,700 to 1,250 kilowatts, with electricity bills dropping proportionately: from \$600,000 to \$400,000. The total cost of the upgrade came to \$800,000. But, with a \$275,000 rebate from Consolidated Edison, the internal rate of return was 33.8 percent.

## GREEN LIGHTS CHRONOLOGY: JANUARY 1992 TO JANUARY

## January



- First Green Lights public service advertisement appears in special *BusinessWeek* double issue



- National Lighting Product Information Program (NLPIP) issues Specifier Report on Electronic Ballasts



- State of Missouri joins Green Lights

## February



- Governors Pete Wilson of California and Lawton Chiles of Florida cosign a letter urging governors of 48 other states to join Green Lights



- State of Idaho joins Green Lights

## March



- EPA Region 2 holds major press event in New Jersey, at which four utilities sign MOU, making New Jersey first state with all its utilities in Green Lights Program



- EPA Administrator holds press conference at EPA headquarters in Washington DC announcing success of Green Lights Program



- NLPIP issues Specifier Report on Power Reducers

## April



- 100th Fortune 1000 Company joins Green Lights Program



- Green Lights Bulletin Board goes on-line



- State of Hawaii joins Green Lights

## May



- Number of Green Lights participants exceeds 500



- EPA Administrator William K. Reilly joins Governor William Weld of Massachusetts at ENERGI (EPA Northeast Region Green Initiative) to promote future public/private partnerships



- Number of Green Lights Allies tops 250



- Decision Support System version 1.1 released



- Green Lights public service advertisement appears in *Fortune* magazine



- Green Lights participants join Mayor Bob Lanier in press event to officially launch Green Lights Program in Houston, Texas



- Massachusetts, Maine, and Nebraska join Green Lights

## June



- Over 2.5 billion square feet of space committed to Green Lights



- Quikalc version 1.0 is released



- Decision Support System version 1.1 released

**American Express**

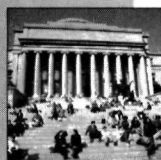
became one of the first Green Lights Partners in February 1991.

**Browning Ferris**



















was one of the original Green Lights Charter Partners when the program was launched in January 1991.

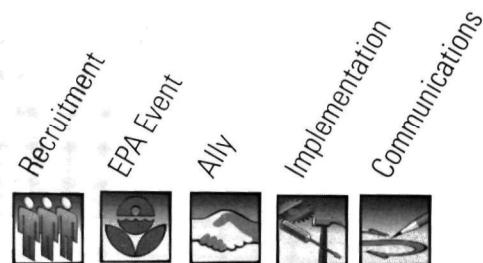
**Columbia University**

signed the Green Lights Memorandum Of Understanding on July 18, 1991.



# 1993

July	August	September	October	November	December	January
 <ul style="list-style-type: none"> <li>■ Pennsylvania joins as 12th Green Lights State Partner</li> </ul>	 <ul style="list-style-type: none"> <li>■ Number of Green Lights participants exceeds 600</li> </ul>	 <ul style="list-style-type: none"> <li>■ Green Lights Program wins National Environmental Achievement Award</li> </ul>	 <ul style="list-style-type: none"> <li>■ EPA joins with Alliance to Save Energy to produce educational video titled "Occupancy Sensors: A Common Sense Approach to Protecting the Environment."</li> </ul>	 <ul style="list-style-type: none"> <li>■ Number of Green Lights Endorsers exceeds 50</li> </ul>	 <ul style="list-style-type: none"> <li>■ Number of Green Lights participants exceeds 700</li> </ul>	 <ul style="list-style-type: none"> <li>■ Arkansas joins as 13th Green Lights State Partner</li> </ul>
 <ul style="list-style-type: none"> <li>■ NLPIP issues Specifier Report on Specular Reflectors</li> </ul>		 <ul style="list-style-type: none"> <li>■ Total attendance for Lighting Services Group Training Workshops exceeds 900</li> </ul>	 <ul style="list-style-type: none"> <li>■ Over 3 billion square feet of space committed to Green Lights</li> </ul>	 <ul style="list-style-type: none"> <li>■ New Green Lights Ally Hotline is installed</li> </ul>	 <ul style="list-style-type: none"> <li>■ Goodyear Blimp broadcasts Green Lights message and logo</li> </ul>	 <ul style="list-style-type: none"> <li>■ Green Lights Surveyor Ally Program announced</li> </ul>
 <ul style="list-style-type: none"> <li>■ Financing Database version 2.1 released</li> </ul>		 <ul style="list-style-type: none"> <li>■ Debut of NBC "Environmental Showcase" program on Green Lights</li> </ul>			 <ul style="list-style-type: none"> <li>■ NLPIP issues Specifier Report on Occupancy Sensors</li> </ul>	
		 <ul style="list-style-type: none"> <li>■ Mobil Oil Corporation places paid advertisements for Green Lights Program in <i>Time</i>, <i>Newsweek</i>, <i>New York Times</i>, and <i>USA Today</i></li> </ul>				
		 <ul style="list-style-type: none"> <li>■ Financing Database version 2.12 released</li> </ul>				



INTERSTATE **h** HOMES

**IPS** ELECTRIC  
24 Hour Service

**MIDWEST** GAS  
24 Hour Service



**SHENSON**  
CONTROLS  
JANITZEN



**Bigelow**

**KMI**

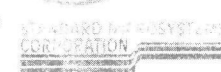


**Steelcase**

**Jantzen**

**LEXA LIFE INTERNATIONAL CORPORATION**

**LONE STAR STEEL**



**kinko's**

**VISKASE**



**University of Southern Maine**

**L.L.Bean**

**LTV** Aerospace and Defense

**Lie Claiborne**

**St Paul**

**Lyondell**

**Lockheed**

**WOLVERINE**  
WWW.WOLVERINE.COM



**McKeesport Hospital**



**MARYLAND SCIENCE CENTER**



**MARTIN MARIETTA**

**Mobil**

**INNOVA**  
HEALTH SYSTEM



**McNEIL**  
REAL ESTATE MANAGEMENT INC.

**SONY**

**THE MEADE GROUP**

**MEMOREX TELEX**

**Marathon Oil Company**



**St. Michael's Hospital**

**SATS**



**MT. BACHELOR**



**MARKER**



**MOTOROLA**



**THRIFT DRUG**

**Timberland**



**National Westminster Bancorp.**

**AEC**

**NORTH & SOUTH ALTERNATIVE ENERGY CORPORATION**



**WARNER LAMBERT**

**Nestle**



**PRIMA BELLEVUE CORPORATION**



**Northern Illinois Medical Center**

**PRESTON PEOPLE**

**INTERGRAPH**

**WACHOVIA**

**SOUTHWIRE**



**Pathmark**

**PLANNED PARENTHOOD**



**Polaroid**

**INTERGRAPH**

**PWG**



**Phoenix Home Life**

**NJHA**

**Central Carolina Bank**



**Sallie Mae**

**PROVIDENT LIFE AND ACCIDENT INSURANCE COMPANY OF AMERICA**

**PHILIPS**



**NSI**  
National Service Industries

**NATIONAL LIGHTING PRODUCT INFORMATION PROGRAM**

**Service**

**NYNEX**

**RICOH**

**SIEMENS**



**Marathon Oil Company**



**Whirlpool**

**NE**

**UNION OF CONCERNED SCIENTISTS**

**Union Camp**

**Ravenswood Hospital Medical Center**



**Southern Bell**

**Straub**



**TEXACO**



**GENERAL DYNAMICS**

**Redlands Federal Bank**  
A century of safety, security and strength.



**Sealed Air Corporation**

**USWEST**

**SAIC**

**Science Applications International Corporation**



**Underwriters Laboratories Inc.**

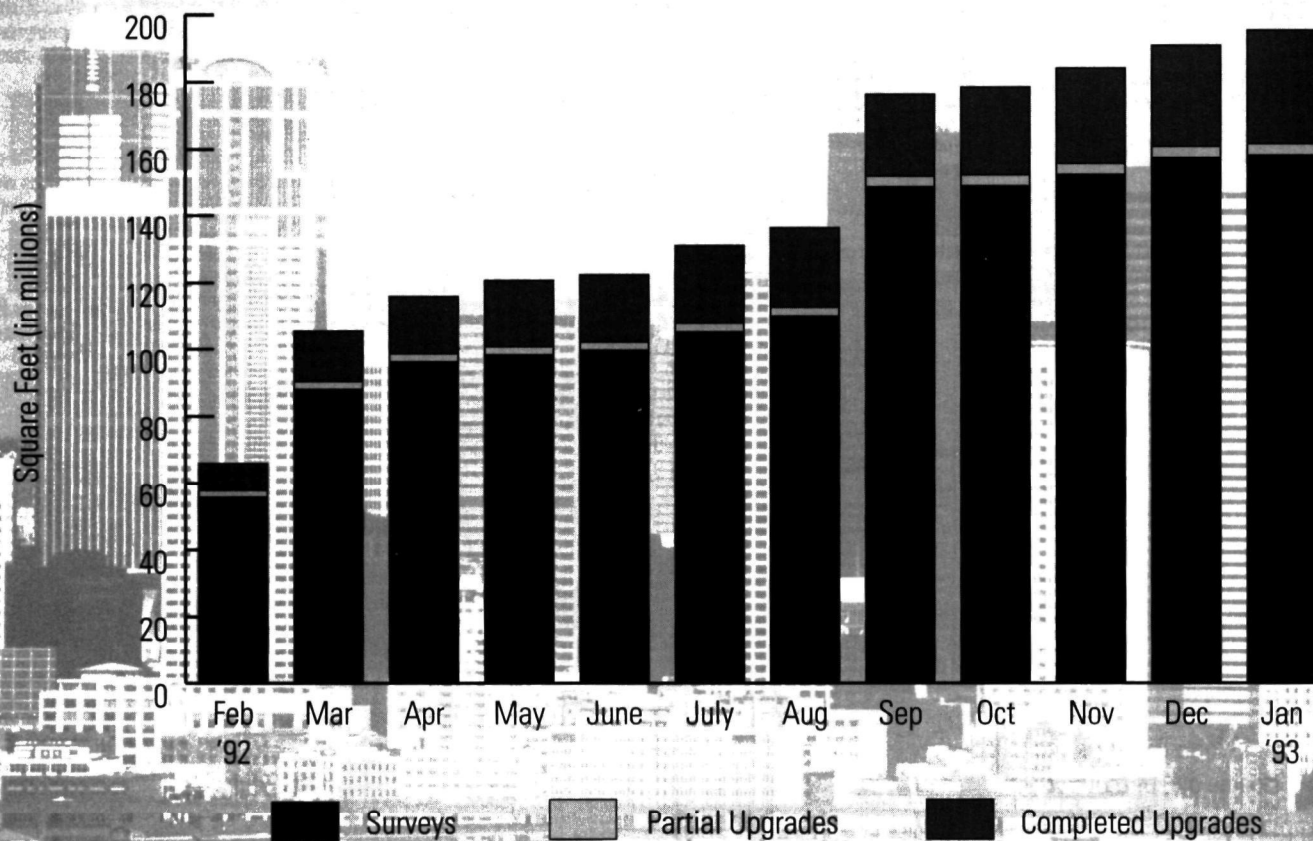
**TRANSAMERICA**

**National Westminster Bancorp**

**TOSHIBA**

**RSL** Reliance Standard Life Insurance Company

## GREEN LIGHTS UPGRADE PIPELINE

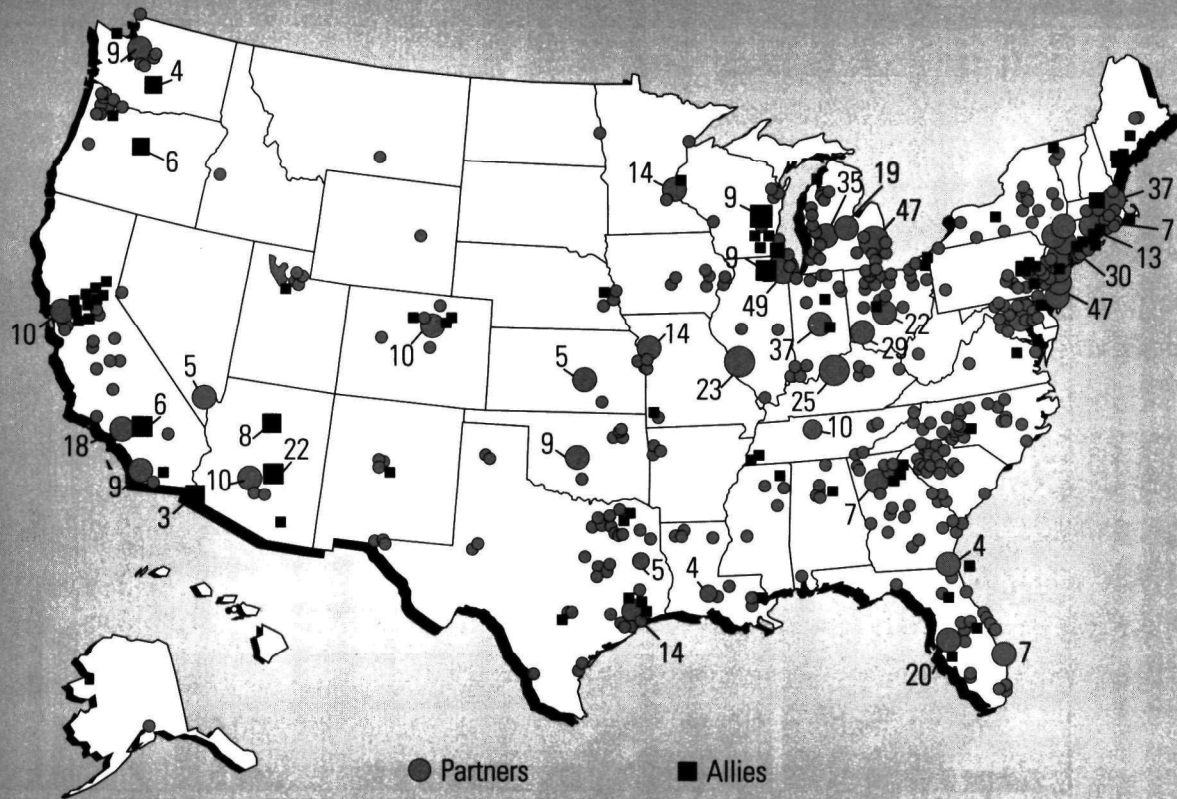


## ...UPGRADE THEIR LIGHTING

Over 200 Green Lights participants have begun surveys and/or upgrades.



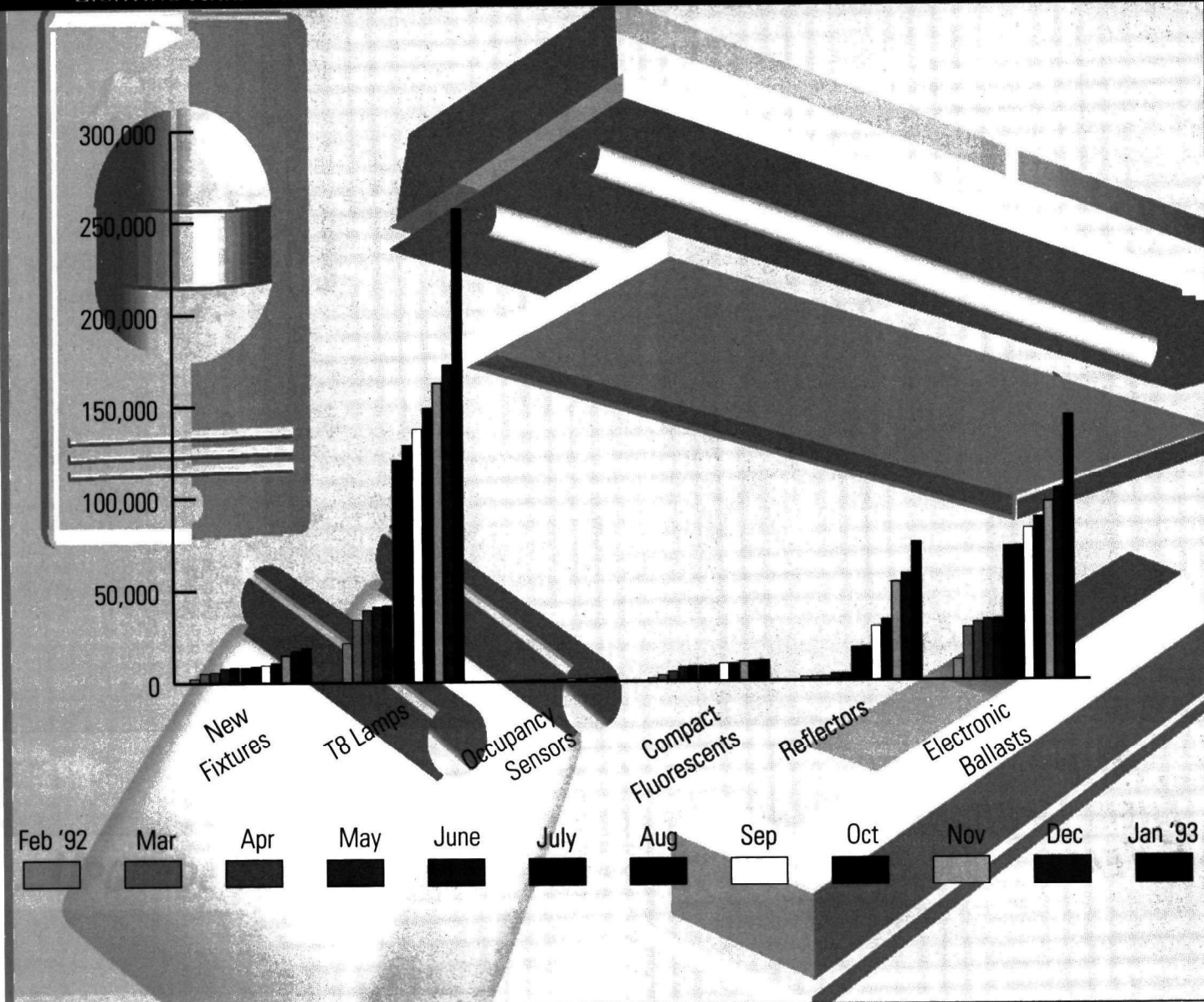
## LOCATIONS OF LIGHTING UPGRADE PROJECTS AS OF JANUARY 31, 1995



## ... AND COMPLETE THEIR UPGRADES WITHIN 5 YEARS

*Of those Green Lights participants reporting their progress to date, close to 25 percent of their square footage is currently being surveyed or upgraded.*

# LIGHTING HARDWARE INSTALLED IN COMPLETED UPGRADES REPORTED TO DATE (CUMULATIVE)



# WHAT DOES EPA PROVIDE TO SUPPORT THEIR PARTNERS?

EPA agrees to provide Green Lights participants with a variety of support services specifically designed to facilitate the installation of high quality, profitable, pollution-preventing lighting upgrades. EPA supports Green Lights participants with a package of tools designed to ensure that lighting upgrades will result in the greatest possible energy savings and the highest possible return on investment. Additionally, Green Lights "Allies" programs for lighting manufacturers, lighting management companies, and electric utilities extend the Green Lights partnership by enlisting the support of the lighting and power industries. Like Partners, Green Lights Allies agree to upgrade their lighting, but also commit to work with EPA to enhance the existing lighting market infrastructure and promote energy-efficient lighting to potential users.

**Getting Started**

- Organize Staff
- Determine Survey Approach
- Initial Survey and Analysis
- Survey and Analysis by Outside Professional
- Building Survey and Analysis
- Project Specifications
- Project Planning
- Evaluate Financing Options
- Evaluate Lighting Performance
- Request Proposals
- Project Implementation
- Project Management
- Equipment Disposal
- Maintenance
- Lighting Maintenance

**Green Lights Program**

**Lighting Upgrade Manual**

**NATIONAL LIGHTING PRODUCT INFORMATION PROGRAM**

**Lighting Upgrade Manual**

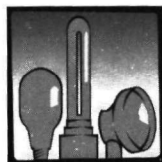
**Green Lights**

**U.S. Environmental Protection Agency**

**Global Change Division**

**Third Edition**

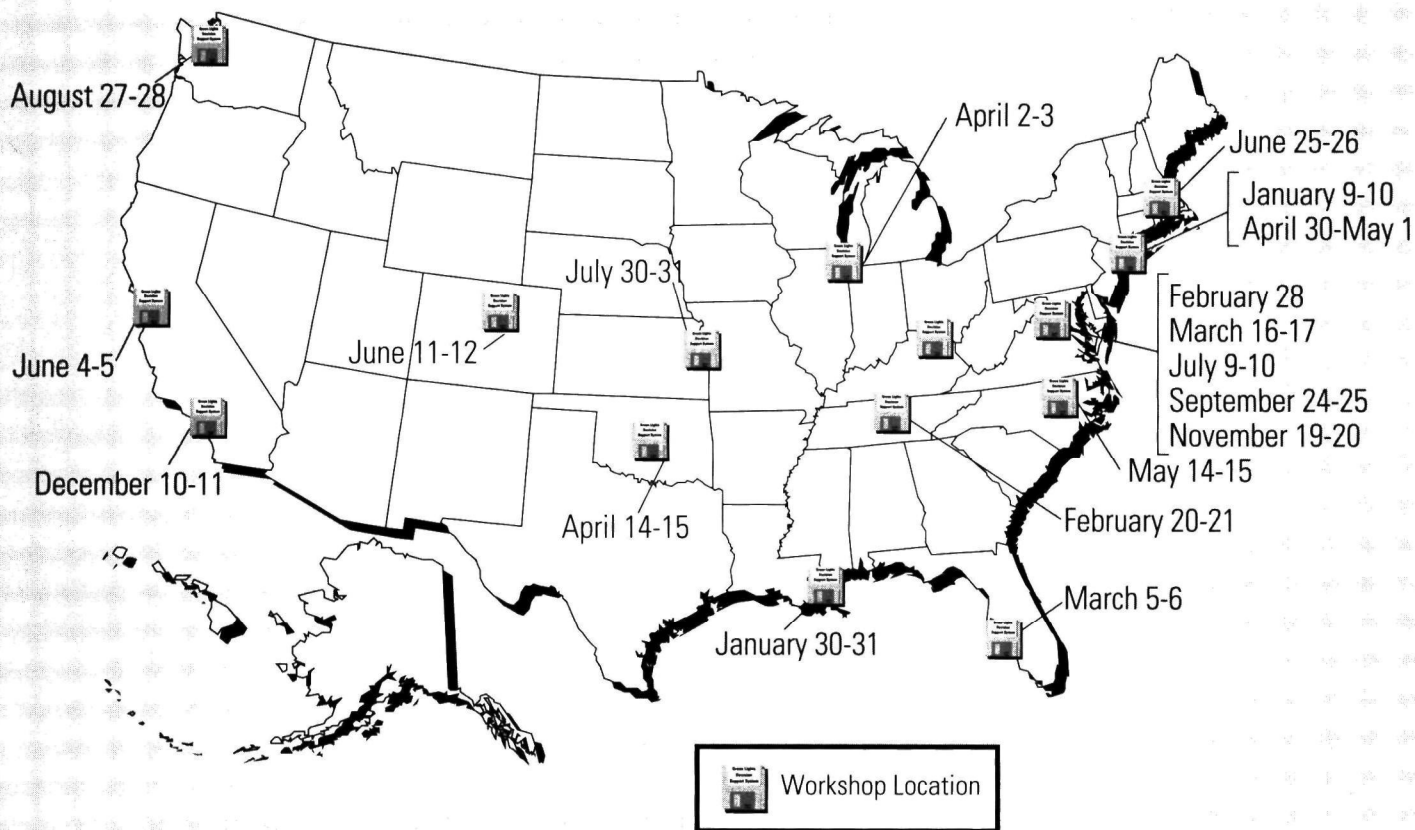
**July 1992**



## A LIGHTING SERVICES GROUP...

A team of lighting experts provides Green Lights participants with technical support and problem-solving advice through (1) a dedicated technical hotline; (2) a comprehensive **Lighting Upgrade Manual**; (3) an ongoing series of regional training workshops; (4) up-to-date literature covering a variety of lighting technologies and pertinent upgrade implementation issues; and (5) on-site implementation visits.

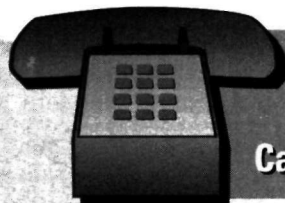
## GREEN LIGHTS WORKSHOP LOCATIONS IN 1992



*Over 900 individuals have attended Green Lights training workshops, which provide participants with hands-on problem-solving skills that facilitate the lighting upgrade process. Over 20 workshops are planned for 1993.*

GREEN LIGHTS INFORMATION SUPPORT IN 1992

General Hotline



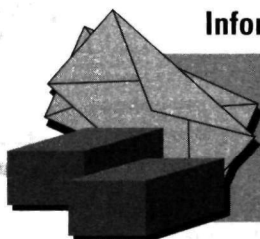
**12,156**  
Calls & Faxes Received

Green Lights Program Office

**11,640**  
Calls Received



Informational Materials Mailed



**7,332**  
Standard Packages

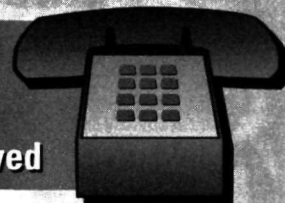
Technical Hotline



**5,292**  
Calls Made/Received

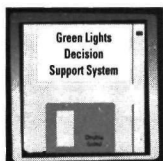
Ally Hotline

**1,452**  
Calls Made/Received



*Three Green Lights Hotlines—for implementation, Ally programs, and general inquiries—provide immediate answers to program participants and the public.*





## **...DECISION SUPPORT SOFTWARE**

*This state-of-the-art software package allows Green Lights participants to rapidly analyze their options for installing energy-efficient lighting. The system helps participants survey their lighting systems in their facilities, assess their upgrade options, and select the option which maximizes energy and pollution savings while simultaneously maintaining or improving lighting quality and meeting the Green Lights profitability criteria. Green Lights participants receive this software package free of charge at Green Lights Training Workshops.*



## **...THE NATIONAL LIGHTING PRODUCT INFORMATION PROGRAM**

*EPA co-sponsors the National Lighting Product Information Program (NLPPI), an objective source of current information on energy-efficient lighting. The program, based at Rensselaer Polytechnic Institute's Lighting Research Center, produced a series of Specifier Reports in 1992 on electronic ballasts, reflectors, power reducers, and occupancy sensors. Each Specifier Report provides name brand product performance information. Specifier Reports are mailed to Green Lights participants at no charge.*



## **...A FINANCING DIRECTORY**

*To help Green Lights participants obtain financing, EPA distributes the most comprehensive registries of lighting financing available. These registries include information on utility-sponsored financial assistance, and financing programs offered by energy service companies, banks, and leasing companies. These databases are mailed to Green Lights participants at no charge.*



## **...ALLIES PROGRAM**

*Green Lights Ally programs are comprised of the members of the lighting industry and electric utilities, and are designed to encourage the widespread use of energy-efficient lighting products. Lighting manufacturers, lighting management companies, and electric utilities sign a Green Lights "Memorandum of Understanding," similar to those signed by Green Lights Partners, but also agree to promote energy efficiency to their customers, educate their industry, and implement programs to stimulate greater development and use of energy-efficient lighting. Through its Allies, EPA encourages greater investment in the development and marketing of innovative lighting technologies.*



**MANUFACTURER ALLIES** • 3M • A Weatherization Co/AWXCO • ALCOA/Aerospace/Commercial Rolled Products Div. • ALP Lighting & Ceiling Products • Advance Transformer Company • Advanced Control Technologies, Inc. • Amalco Metals, Inc. • American Energy Management, Inc. • American Illuminetics, Inc. • American Lighting Corporation • American Louver Company • American Systems & Services • Amerlux, Inc. • Appliance Control Technology, Inc. • Area Lighting Research • Art Directions Inc. • Badger, USA • Brayer Lighting, Inc. • Bright Side Lighting • Brownlee Lighting • Bryant Electric • CCR Lighting Technologies • CEW Lighting, Inc. • CMB Associates, Inc. • CSL Lighting Manufacturing, Inc. • Canterra Electronics International, Inc. • Chloride Systems, Manufacturer of Exide Lightguard • Columbia Lighting, Inc. • Computer Power Inc. • Control Systems International • Cooper Lighting • Dark To Light, Inc. • Davis Controls Corporation • Dazor Manufacturing Corporation • Dielectric Coating Industries • Digecon • Duralux Industries • Duray Fluorescent Manufacturing • Duro-Test Corporation • Dynamic Energy Products, Inc. • ESCO International • East Rock Manufacturing & Technology • Edison Price Lighting • Elba USA, Inc. • Electronic Ballast Technology, Inc. • Emergency Safety Products, Inc. • Energy & Environmental Lighting Services • Energy Design Corporation • Energy Saving Products, Inc. • Enersave Company • Enertron Technologies, Inc. • Enterprise Lighting • Environmental Energy Group • Etta Industries • Exitronix Division of Barron Manufacturing • FTI • Fail-Safe Lighting Systems • Feit Electric Company • Finelite • First Lighting, Inc. • Flexiwatt Corporation • Flexlite Inc. • FulCircle Ballast Recyclers • GE Lighting Institute • GTE, Sylvania Lighting Division • The Genlyte Group, Inc. • Good Earth Lighting Company • Guardian Lighting Controls, Inc. • Harris Manufacturing Inc. • Heath Company • Hetherington Industries, Inc. • Holophane Company, Inc. • Honeywell • House O'Lite Corporation • Hubbell Inc., Lighting Division • INCON Industries • Illumination Control Systems, Inc. • Industrial Energy Systems Inc. • Indy Lighting • Integrated Power and Lights, Inc. • International Energy Conservation Systems • Isolite • Janmar Lighting • Jedcor Energy Management Company • Johnson Controls, Inc. • Juno Lighting, Inc. • K-Lite Division of ICI Acrylics/K-S-H Inc. • Kenall • Kilowatt Saver • Kim Lighting • King Technology • Kirlin Company • LSI Industries • Lamar Lighting Company, Inc. • Legion Lighting Company, Inc. • LexaLite International • Light Energy Corporation • LightMedia Corporation • Lighting & Lowering System • Lighting Resources, Inc. • Lightron of Cornwall, Inc. • Lights of America • Lightway Industries • Litecontrol • Litetronics International • Lithonia Lighting • Lorin Industries • Lumatech Corporation • Lumax Industries, Inc. • Lumen-Tronics, Inc. • ML Systems Corporation • Magnaray International • MagneTek, Inc. • Marvel Lighting Corporation • Megalite Corporation, Inc. • Mercury Recovery Services • MetalOptics, Inc. • MirrorLight, Inc. • Moldcast, a Division of USI Lighting, Inc. • Mor-Lite • Motorola Lighting, Inc. • Mule Emergency Lighting, Inc. • MyTech Corporation • NEONIX • NOVA Conservation & Load Managers • NRG Lighting Inc. • National Lighting Company, Inc. • Norbert Belfer Lighting • Nova Ballast Company, Inc. • Novitas, Inc. • OSRAM Corporation • Optical Coating Laboratory, Inc. • Optilight, Inc. • OrEqual, Inc. • PLC-Multipoint • Paragon Electric Company, Inc. • Paramount Industries • Parke Industries, Inc. • Parrish Lighting & Engineering • Peerless Lighting Corporation • Peschel Energy, Inc. • Philips Lighting Company • Pleamonn Products • Powerline Communications, Inc. • Pre Finish Metals, Inc. • Prescolite Controls, Inc. • Prescolite, a Division of USI Lighting, Inc. • Prime Ballast • Pritchett Wilson Group • Progress Lighting, Inc. • RAB Electric Manufacturing Company • Reflect-A-Light, Inc. • Reflective Light Technologies • Remtec Systems • Robert Group • Robertson Transformer Company • Roth Bros., Inc. • Ruud Lighting, Inc. • SPI Lighting Inc. • Salesco Systems USA, Inc. • Save-a-Watt, Inc. • Scientific Component Systems • Sea Gull Lighting Products, Inc. • Sensor Switch • Sharlin-Lite • Silverlight Corporation • Simkar Lighting Fixture Company, Inc. • Solar Electric Systems • Solar Kinetics, Inc. • Southco Metal Services, Inc. • Spaulding Lighting, Inc. • Sportlite, Inc. • Standard Enterprises, Inc. • Steelcase, Inc. • Sterling, RMC • Stocker & Yale • Systematix, Inc. • TSAO & CSL • Tamarack Corporation • Tek-Tron Enterprises • Teron Lighting • Terralux, Inc. • Thomas & Betts Commercial & Industrial Lighting • Thomas Industries, Inc. • Topaz Energy Systems, Inc. • Toshiba America Consumer Products • Triad Technologies Inc. • TrimbleHouse Corporation • UNENCO • Ulster Precision, Inc. • Valmont Electric • Venture Lighting International • Videssence, Inc. • Vision Impact Corporation • Visual Images, Inc. • Waldmann Lighting Company • Warner Technologies • Watt Stopper, Inc. • Wellmade Metal Products Company • HE Williams, Inc. • Wismarq Light Company, Inc. • X-Tra Light Systems, Inc. • Xtra Light • Zumtobel Lighting Inc. • **UTILITY ALLIES** • American Electric Power Service Co. • Arizona Public Service Company • Atlantic Energy • Bangor Hydro Electric • Boston Edison Company • Central Maine Power • City Utilities of Springfield • City of Georgetown, Texas • Consolidated Edison of New York • Duke Power Company • Florida Power Corporation • Grant County PUD • Green Mountain Power Corporation • Greenville Utilities Commission • Idaho Power Company • Jersey Central Power & Light • Kansas City Power & Light • Los Angeles Department of Water & Power • New England Electric System • New York Power Authority • Northern States Power Company • O & A Electric Cooperative • Oklahoma Gas and Electric Company • Omaha Public Power District • Orange and Rockland Utilities, Inc. • Orlando Utilities Commission • PSI Energy, Inc. • PUD #1 of Grays Harbor County • Pacific Gas and Electric • Pike County Light and Power Company • Port Angeles Light Department • Portland General Electric Company • Potomac Electric Power Company • Public Service Electric and Gas Company • Puerto Rico Electric Power Authority • Puget Sound Power & Light Company • Rockland Electric Company • Sacramento Municipal Utility Department • Salt River Project • San Diego Gas and Electric • South Carolina Electric & Gas Company • South Carolina Public Service Authority • Southern California Edison • Springfield Utility Board • Tampa Electric Company • Taunton Municipal Lighting Plan • UNITIL System of Companies • Virginia Power • Wisconsin Electric Power Company • Wisconsin Power & Light Company • **LIGHTING MANAGEMENT COMPANY ALLIES** • A-1 Lighting Service Company • ABD Lighting Management Company • Aetna Corporation • American Lighting, Inc. • Amtech Lighting Services • Applied Energy Management, Inc. • Approved Lighting Corporation • BK Engineering Company • Barney Roth Company • Broadway Maintenance of New Jersey • Cherry City Electric • Chicago Edison Corporation • Colorado Lighting • Conserve Electric Company, Inc. • Continental Lighting Services, Inc. • Creative Lighting Maintenance • Efficient Lighting & Maintenance • Energy Controls & Concepts • Energy Matrix • Eveready Electric Company • FMS Lighting Management Systems • Fluorescent Maintenance Company • Fluorescent Maintenance Service • Fravert Services • General Lighting & Sign Service • IllumElex Corporation • Imperial Lighting Maintenance • Innovative Lighting Services • Kenetech Energy Management, Inc. • LightTec, Inc. • Light Source • Lighten Up, Inc. • Lighting Consultants International • Lighting Maintenance & Service • Lighting Maintenance, Inc. • Lighting Management Corporation • Lighting Solutions • Lighting Systems Too! • Luminaire Service, Inc. • ME Energy Resources • Master Lighting Service • Mira Lighting & Electric Services • Murphy Electrical Maintenance • National Lighting Maintenance Supply Corporation • New Mexico Energy Consultants • Planned Lighting, Inc. • Primo Lighting Management • ProLite Lighting & Sign Maintenance • Professional Lighting, Inc. • Reflections, Inc. • Sica Electrical & Maintenance Company • Stay-Lite Lighting Service • Suburban Lighting, Inc. • Superior Light & Sign Maintenance Company • USA Energy Corporation • United Electrical Maintenance • Universal Lighting Services • Vista Universal, Inc. • Xenergy, Inc. •



**ENDORSERS** • Aerospace Industries Association of America • Airports Council International-North America • Alliance for Environmental Education • American Advertising Federation • American Gas Association • American Hotel & Motel Association • American Public Power Association • American Society For Hospital Engineering of AHA • American Society of Interior Designers • Associated Industries of Massachusetts • Association of Demand Side Management Professionals • Association of Energy Engineers • Association of Professional Energy Managers • Atlanta Regional Commission • Center For Industrial Services, University of TN • Commonsense • Connecticut Business & Industry Association • Consulting Engineers Council of Metro Washington • Consumer Counsel, State of Ohio • Council of State Governments • Edison Electric Institute • Electric Ideas Clearing House • Energy Efficiency Trade Alliance • Environmental Action • Environmental Exchange • Environmental Law Institute • Florida Institute of Government • Georgia Municipal Association • Greater Atlanta Chamber of Commerce • Illuminating Engineering Society of North America • Institute for Alternative Futures • International Facility Management Association • International Institute for Energy Conservation • InterNational Association of Lighting Management Companies • Iowa Association of Business & Industry • Izaak Walton League • Maine Chamber of Commerce and Industry • Maryland Chamber of Commerce • Minnesota Chamber of Commerce • NARUC • Nevada Professional Facility Managers Association • National Association of Chain Drug Stores • National Energy Management Institute • National Restaurant Association • National Rural Electric Cooperative Association • New Hampshire Business & Industry Association • New Jersey Hospital Association • North Carolina Consumers Council • North Carolina Solar Energy Association • Northeast Public Power Association • Northern Light Section IES • Northwood New Hampshire Conservation Commission • Ohio Pollution Prevention Network • Pacific NW Pollution Prevention Research Center • Rhode Island Federation of Garden Clubs, Inc. • Saddleback Mountain Lions Club of New Hampshire • Smaller Business Association of New England • Society for the Protection of NH Forests • Union of Concerned Scientists • Vermont Businesses for Social Responsibility • Virgin Islands Retailer's Association • Wisconsin Center for Demand-Side Research •

---



If you would like additional information on EPA's Green Lights Program, please contact:  
EPA Green Lights  
401 M St., SW (6202J)  
Washington, DC 20460

Green Lights General Hotline: 202 775-6650  
Fax 202 775-6680

Green Lights Technical Hotline: 202 862-1145  
Fax 202 862-1144

Green Lights Ally Hotline: 202 293-4527  
Fax 202 223-9534

Green Lights Electronic Bulletin Board: 202 775-6671