



Green Lights: 5 Years of Profitability & Pollution Prevention

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EPA's Green Lights program recently celebrated its fifth anniversary. And, after five years, there is a great deal to celebrate. More than 2000 organizations have joined Green Lights, representing 5.2 billion square feet (the equivalent of 1 in every 14 commercial buildings in the United States). Completed upgrades by participants to date are saving over 2 billion kilowatt hours of electricity and over \$170 million annually. In addition, the pollution that is prevented from these energy savings is significant. The success of Green Lights is proof that voluntary partnerships can and do work.

Green Lights started in January 1991. EPA launched the program, because lighting accounts for about 20% of the energy used in the United States, and also is responsible for the creation of CO₂, SO₂ and NO_x and other pollutants associated with electricity generation. Recognizing that newer, more energy-efficient technologies could potentially reduce lighting energy consumption by 50-75%, EPA saw an opportunity for environmental protection and a new way for government to work.

Green Lights was thus launched as a voluntary, market-based program, designed to promote the use of more energy-efficient lighting technologies. Participants benefit from lower operating costs and improved workspace quality. The nation as a whole benefits from cleaner air and a more efficient use of our resources.

To join Green Lights, organizations sign a memorandum of understanding (MOU) with the EPA to complete lighting upgrades in 90% of their facilities within 5 years. In return, EPA provides an array of support

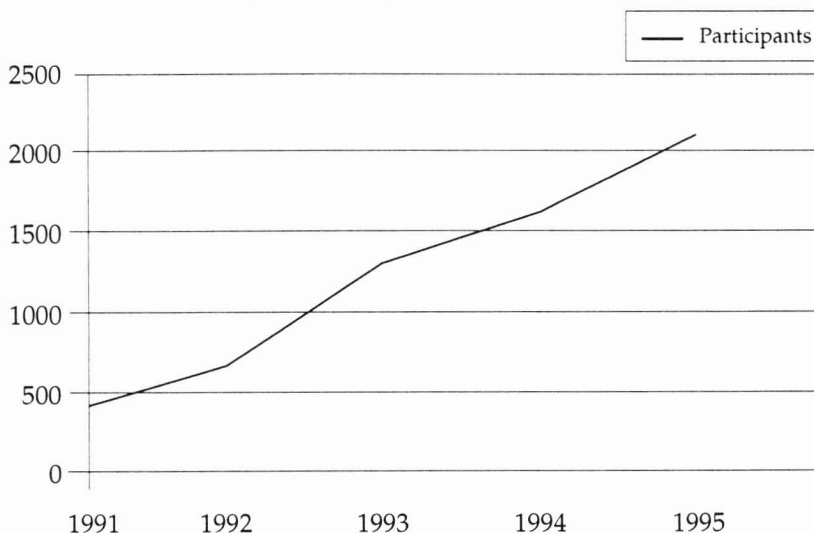
tools such as unbiased technical information, workshops, software programs, financing databases and hotlines to help organizations overcome barriers to installing energy-efficient technologies. EPA also provides recognition and outreach support to help publicize participants' concrete pollution prevention and dollar savings achievements.

The following is a quick overview of Green Lights, progress to date, lessons learned, and a glimpse into the future of the program.

WHO PARTICIPATES IN GREEN LIGHTS?

Any organization can join Green Lights. To date, most of the more than 2,000 participants, (see Chart 1), are small and medium-sized organizations. These include hospitals, universities, state and local governments, private sector companies, and non-profit groups. Green Lights also has many large corporate participants; there are over 180 (almost 40%) of the FORTUNE 500. And Green Lights members come from any sector: retail, banking, chemical, pharmaceutical, educational, and industrial, just to name a few.

Green Lights Participants Growth Since 1991



More than 5.2 billion square feet

Chart 1

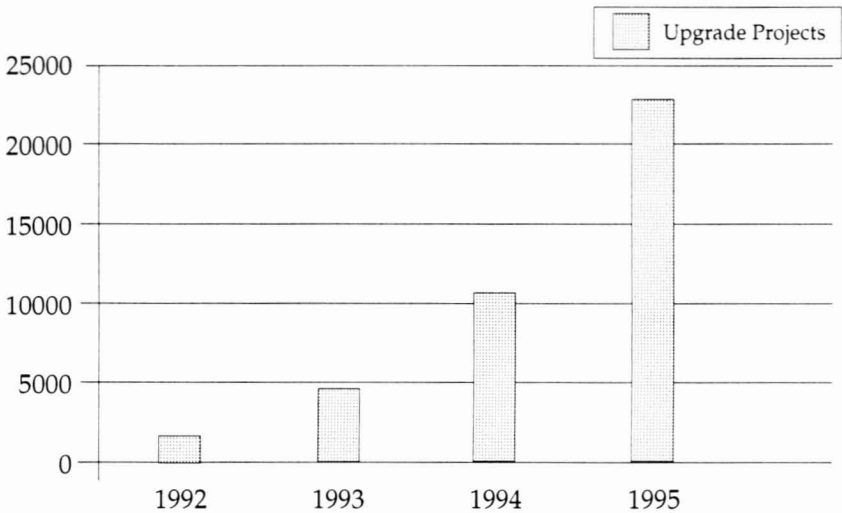
WHAT HAS THE PROGRAM ACCOMPLISHED?

Of the 5.2 billion square feet committed to Green Lights, 20%, or 1 billion square feet have already been upgraded, and over 300 participants have completed 100% of their upgrades. Currently, there are nearly 23,000 upgrade projects underway. (see Chart 2).

Green Lights participants typically cut their lighting bills in half, while maintaining or improving their lighting quality. They do this while using a wide range of energy efficient technologies focused on maximizing the energy efficiency of the entire system, such as T-8 lamps, electronic ballasts, occupancy sensors, and reflectors. As a result, the market for these products and services has grown dramatically. Green Lights participants have invested over \$633 million dollars in lighting upgrades, resulting in the purchase of over 14 million T-8 lamps and more than 6 million electronic ballasts.

These direct savings for participants help the overall economy too. These savings afford Green Lights participants the opportunity to enhance the efficiency of their operations and pursue other opportunities for business growth. As a result of Green Lights' wide reaching effects,

Green Lights: Projects in the Upgrade Pipeline



December 1995 Total: 22,789 projects

Chart 2

the private sector has seen greater net job growth of the lighting service sector than expected. And net job creation as a result of the programs is expected to continue at the same rate. (see Chart 3).

Furthermore, the benefits of program participation have allowed numerous small firms to start and continue to grow. For every dollar spent by EPA, the private sector sees over \$20 in energy cost savings, *in addition* to the pollution prevented.

Green Lights participants are also working to ensure that the light levels in their facilities respond to the needs of their employees and customers. Our customers indicate that their employees find the new lighting systems more pleasant, and more conducive to productive work. Many of our customers also cite the absence of glare on computer screens as an added benefit of their Green Lights upgrades.

Green Lights upgrades also reduce the overall energy use of the buildings. By implementing the Green Lights program, there is less excess heat produced by the new lighting systems, which significantly reduces the overall energy use of a building. This in turn reduces HVAC loads and the associated energy costs.

Green Lights: Net Job Creation Targets through 2000

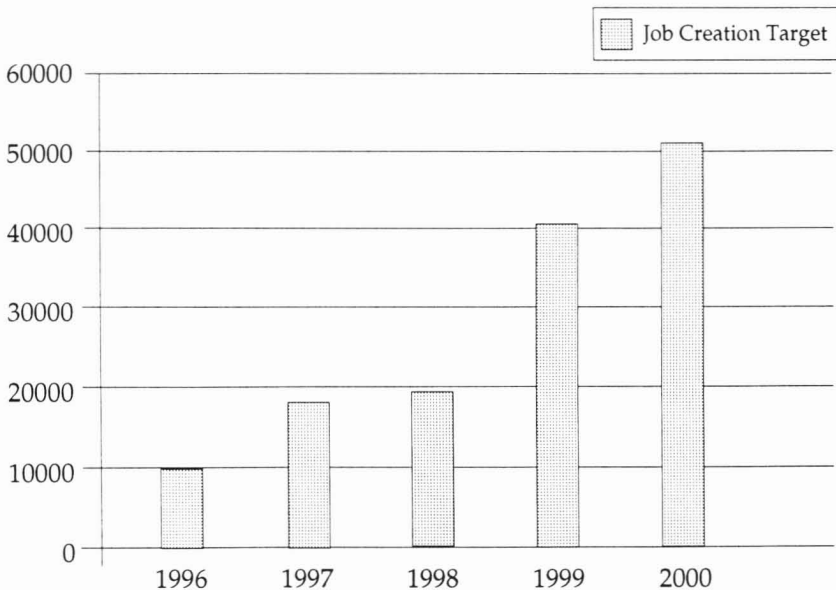


Chart 3

Finally, the pollution savings associated with Green Lights are very real. As of December 1995, over 3 billion pounds of carbon dioxide, 27 million pounds of sulphur dioxide, and over 11 million pounds of nitrogen oxides have been prevented (see Charts 4 and 5).

Green Lights CO₂ Prevented from Completed Upgrades

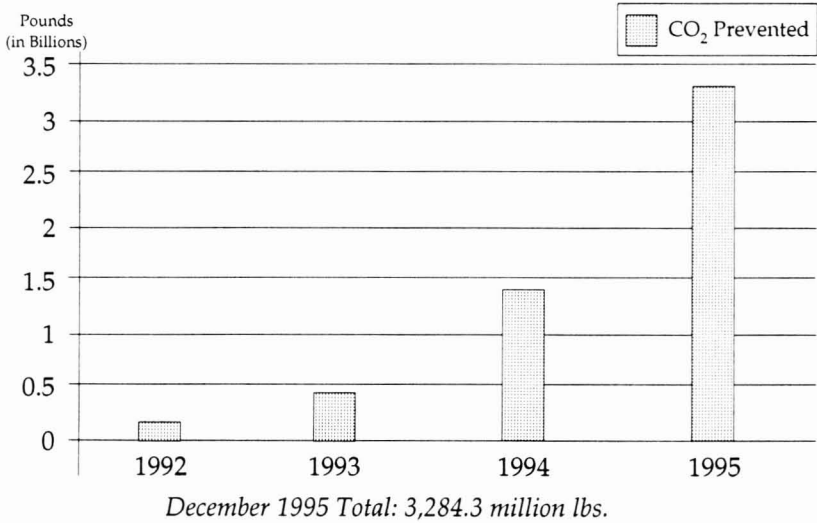


Chart 4

Green Lights: SO₂ and NO_x Prevented from Completed Upgrades

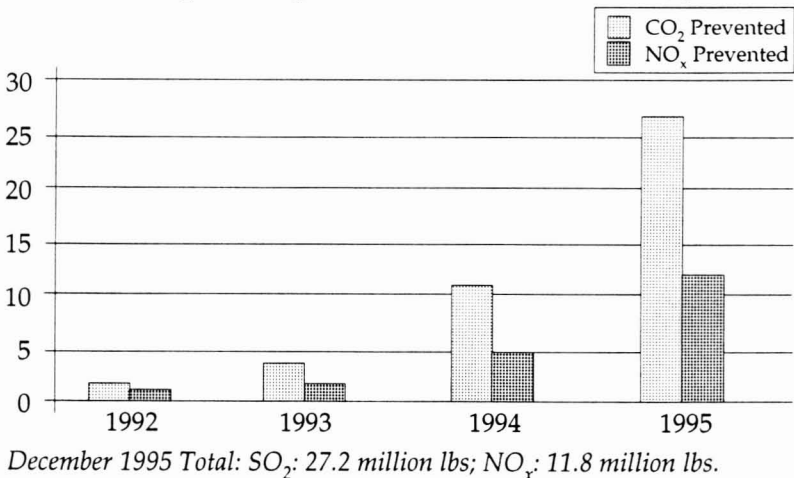


Chart 4

PROOF THAT VOLUNTARY PROGRAMS WORK:
WORDS FROM OUR CUSTOMERS

We know of Green Lights' successes not only from proven facts of money saved and pollution prevented, but from what program participants tell us. As of December 1995, participants were saving over 2.3 billion kilowatt-hours (kWh) of electricity, and \$172 million per year in electrical bills. The following are just a few examples of what our participants have found after joining Green Lights.

Rockwell International's Facility Manager W.B. Shoff pointed out to Green Lights that program participation did not mean sacrificing lighting quality or increased savings for environmental benefits, showing that its integrated approach works. "The single most important thing I have learned from the Green Lights program is... you can find *gold in your existing lighting system, provide improved lighting to your employees, and demonstrate your company's commitment to the environment.*"

As a result of its implementation efforts, **Johnson & Johnson** saved nearly 11 million kWh and over \$800,000 in 1994. And because of its success in the program, Johnson & Johnson was selected as the 1995 Green Lights Large Corporation Partner of the Year. Johnson & Johnson's commitment to the program is rooted in its belief that Green Lights "...can be a tremendous resource for education and awareness."

Likewise, **Sligo Adventist school in Maryland** is enjoying tremendous economic returns due to its Green Lights efforts. Sligo's electrical usage is down more than 130,000 kWh per year, and saving the school over \$11,000 per year. In the often cash strapped education sector, any source of funds is a boon that can be reinvested in students. The environmental savings also bespeak the positive impact of participant efforts. Sligo's upgrades are preventing over 210,000 lbs. of CO₂, 1 million grams of SO₂ and 340,000 grams of NO_x per year. Sligo Facility Manager Kenneth Gair acknowledges that "The idea of *improving lighting quality and saving energy and money* at the same time is hard for most people to believe, *but we have proven that it is possible at our facility.*"

Savings can also be passed further along, providing even greater benefits. Jeff Greene, Facility Management Director for **Leon County, Florida**, points out that since joining the program, county facilities have been able to provide employees and residents with better quality lighting. Moreover, the resulting reduction of cooling loads means lower electrical bills, which translates into saving tax-payer money.

And Green Lights' new and cost-conscious approach to government programs elicited this praise from David Factor, President of **Innovative Lighting Services, Inc.** which received the 1995 Lighting Management Company Ally of the year award for their efforts in promoting the program. "We consider the Green Lights Program really an exemplary program... high quality, excellent, service-oriented and... entrepreneurial."

These examples show that the Green Lights approach works—not only for participants and their bottom lines, but for their customers and the environment.

WHAT'S NEW IN GREEN LIGHTS?

Over the past 5 years, Green Lights has embarked on number of new initiatives to respond to customer needs. For example, Green Lights has developed special tools and outreach efforts for schools, hospitals, and municipalities. We are currently working on an effort to respond to the particular needs of small businesses (those under 100,000 square feet).

Green Lights customer support is also expanding to include new and improved software packages to ease and accelerate project analyses and the annual progress reporting process. The software will allow easy entry of energy use data and instant information about dollar, energy, and pollution prevention savings.

WHAT LESSONS HAVE WE LEARNED?

The first lesson we learned is that the success of the Green Lights program has come not only from its proven ability to improve the environment and produce real savings for participants but from its unwavering adherence to its unique principle of voluntary participation. What has also been key for Green Lights' success is its flexibility. Green Lights is customer service driven. Our customers help us by telling us what is working, what is not working, and how to improve our program. Because we are a voluntary program, we can respond quickly and successfully to most suggestions.

For example, the useful Green Lights tool ReportKalc was introduced to assist with the reporting aspect of the participants' commitment. Over the past several years, ReportKalc has undergone numerous revi-

sions. The ease of reporting has therefore been improved in ways suggested by our customers. Today, most program reports are submitted electronically. Likewise, Green Lights Lighting Upgrade Workshops formats were changed as a result of participant's suggestions.

GREEN LIGHTS: 1996 AND BEYOND

Our current customer base, once they have completed their upgrades, will achieve more than 30 billion kWh in energy savings by the year 2000 (see Chart 6). And the resulting environmental impact will be as dramatic. By 2000, these targets will reduce SO₂ by 153,500 tons, NO_x by 62,100 tons (see Chart 7) and will create 51,200 net jobs (see Chart 3, previous).

In the next five years, Green Lights hopes to continue and multiply the success of the first five years. We are working to triple the number of Green Lights participants by the year 2000, (Chart 8) and therefore triple the pollution prevented and the dollars saved. Likewise the market for energy-efficient products and services will continue to grow. EPA predicts that by the year 2000, participants can save billions of dollars annually, and ultimately, once Green Lights is adopted by everyone, can prevent 225 billion pounds of CO₂, or 4% of national car emissions. This is equivalent to taking 15 million cars off the road.

Green Lights: Annual Energy Savings Targets through 2000

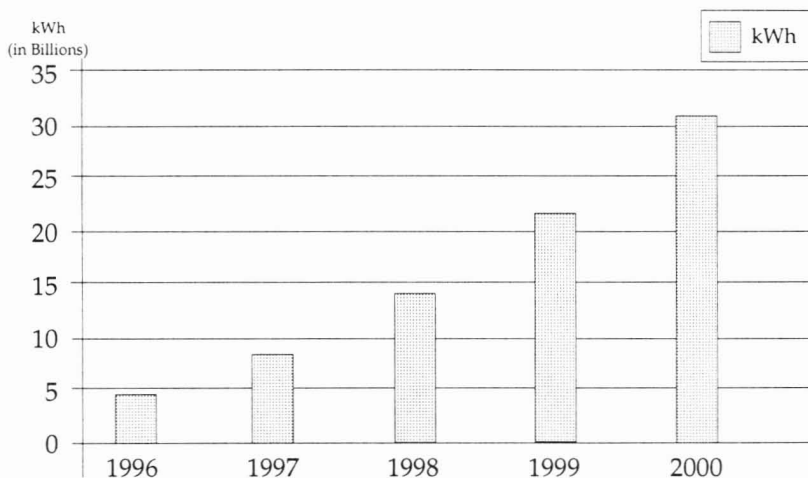


Chart 6

Green Lights: Annual Energy Savings Targets through 2000

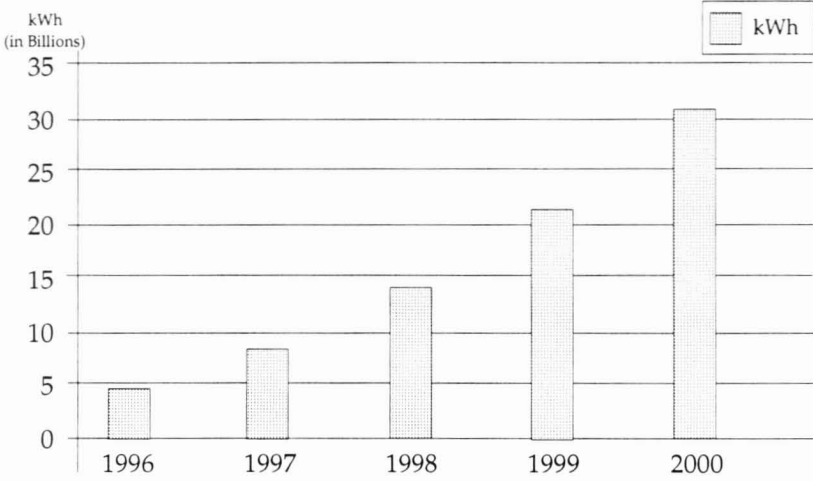


Chart 6

Green Lights: SO₂ and NO_x Prevention Targets through 2000

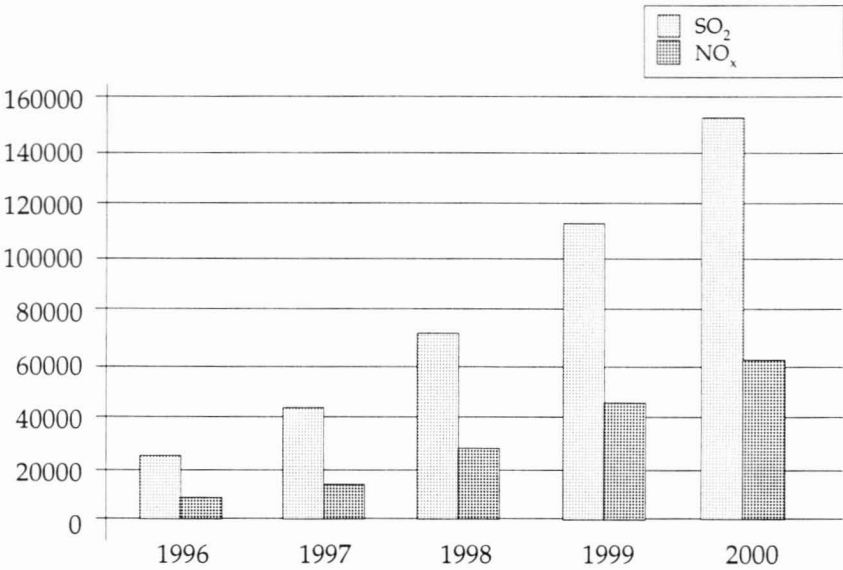


Chart 7

Green Lights: Net Job Creation Targets through 2000

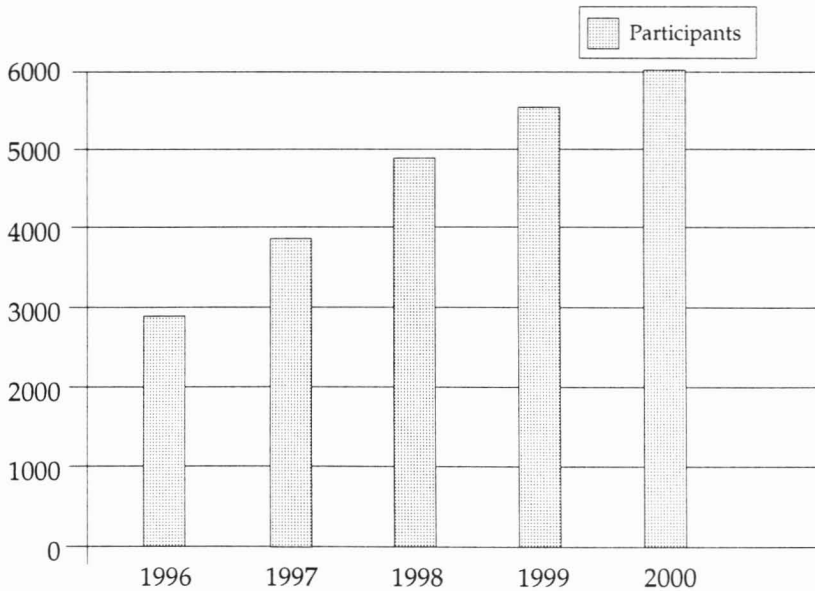


Chart 8

ENERGY STAR BUILDINGS: THE NEW FRONTIER

In its continuing efforts to build upon its successes, EPA has created new initiatives that will further the successes and approach of Green Lights. One such initiative is the ENERGY STAR Buildings program. Having already joined Green Lights, ENERGY STAR Buildings participants plan to reduce heating, ventilation, and air-conditioning loads and improve fans and air-handling systems where profitable. ENERGY STAR Buildings participants sign an addendum to the Green Lights MOU, which spell out their and EPA's commitments.

ENERGY STAR Buildings currently has more than 76 participants, representing over 280 million square feet. In 1995, ENERGY STAR Buildings concluded its Showcase Buildings Program, a highly successful initiative that demonstrated the future effectiveness of the programs goals in 24 buildings. Showcase participants achieved energy savings of 35% and an average internal rate of return on their investments of 30%.