



Energy Star Buildings

Introducing... The Energy Star Buildings Program



The energy to run buildings in the United States costs about \$70 billion a year. Besides being costly, producing the electricity to run these buildings contributes to a host of environmental problems: acid rain, smog, and global warming. EPA's Energy Star programs promote the use of profitable, energy-efficient technologies as a way to increase profits and competitiveness, while at the same time preventing pollution.

What Is the Energy Star Buildings Program?

EPA's new Energy Star Buildings program is a voluntary energy-efficiency program for U.S. commercial buildings. Expanding on the successful Green Lights program, this initiative focuses on profitable investment opportunities available in most buildings, using proven technologies. A central component of the program is a step-by-step implementation strategy that takes advantage of system interactions, enabling building owners to achieve additional energy

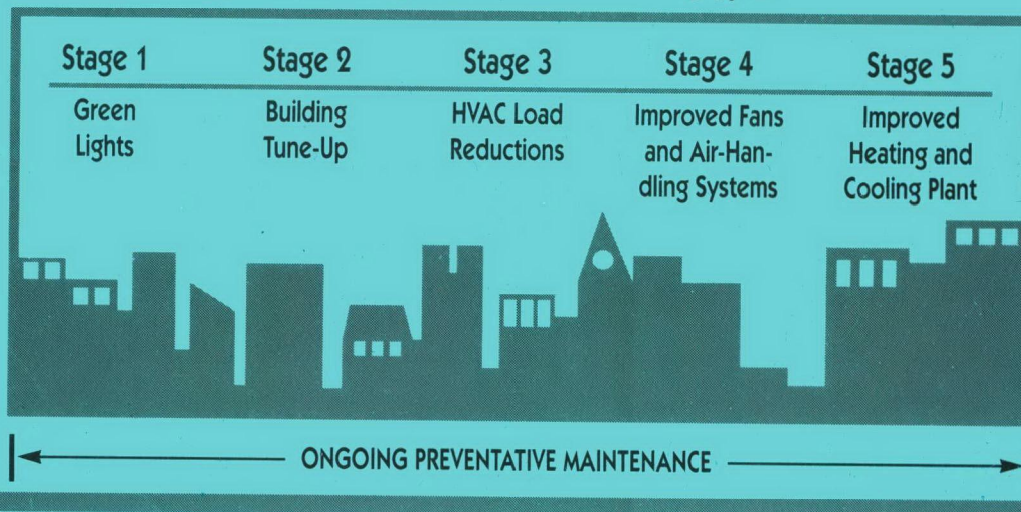
savings while lowering capital expenditures.

The five-stage Energy Star Buildings upgrade strategy is shown below. One key advantage of this approach is that it reduces equipment costs. By implementing Green Lights (Stage 1), tuning up building systems (Stage 2), and investing in upgrades that reduce heating and cooling loads (Stage 3), building owners can significantly reduce the size and cost of equipment associated with Stages 4 and 5. Moreover, uncertainties

about the proper sizing of upgraded cooling equipment (chillers and direct-expansion units) are reduced, leading to potential equipment downsizing and cost savings.

Partners are expected to follow this staged implementation strategy in upgrades of buildings they own. The Energy Star Buildings program will also seek to expand markets for emerging energy-efficient technologies with the goal of reducing prices to make investments even more profitable.

This staged approach provides a broad strategic framework for making comprehensive efficiency upgrades in a range of commercial building types.



Energy Star Buildings: Maximizing Energy Efficiency (and Profit!)

EPA asks Energy Star Buildings participants to perform upgrades only where profitable. The five stages of the Energy Star Buildings program are sequenced to maximize savings, prevent oversizing, and minimize equipment costs.

Stage 1: Green Lights

- Install energy-efficient lighting technologies

Stage 2: Building Tune-Up

- Check and adjust building systems
- Develop and implement an ongoing preventative maintenance plan

Stage 3: HVAC Load Reductions

- Install window films, reflective roof coverings, and more effective roof insulation
- Buy energy-efficient computers, monitors, and printers that have the EPA Energy Star logo

Stage 4: Fan System Upgrades

- Upgrade variable-air-volume (VAV) systems with variable-speed drives (VSDs)
- Upgrade constant-air-volume systems with VAV systems
- Reduce fan system oversizing
- Replace existing motors with smaller, high-efficiency motors

Stage 5: HVAC Plant Improvements

- Replace or upgrade chillers
- Plan for 1995 CFC phaseout
- Retrofit water pumps and compressors with VSDs
- Replace electric resistance heat where possible

How Does EPA Help?

In addition to publicly recognizing an organization for its participation in the program and the energy savings it achieves, EPA will provide a number of technical resources to help plan and implement building upgrades. These resources include:

- The *Energy Star Buildings Manual*, a step-by-step guide to a comprehensive building upgrade.
- Software to calculate savings from upgraded fan systems.
- A data base of financing programs for building-efficiency upgrades.

- Case studies documenting monitored savings for specific technologies such as VSDs, fan motors, and Showcase Building upgrades.
- Generic specifications for specific energy-efficient technologies.
- Information and guidance on indoor air quality issues.
- Guidance on how to use the CFC phaseout as an opportunity to increase building efficiency and reduce the cost of transitioning to alternative refrigerants.

When Can I Join?

EPA plans to fully launch the Energy Star Buildings Program in the fall of 1995, upon completion of a demonstration phase currently in progress. During this demonstration phase, the Energy Star Building upgrade strategy is being implemented in 24 "showcase" buildings across the country. The owners of these 24 build-

ings are working to complete the upgrades within a compressed schedule to demonstrate and verify that the strategy works to maximize energy savings at a profit. The Showcase Building projects are also providing the opportunity to field-test and refine EPA's technical support materials before expanding the program.

Suppose I Want to Start Now?

Since Stage 1 of the Energy Star Buildings upgrade strategy is EPA's Green Lights program, interested organizations can get a head start on becoming an Energy Star Buildings Partner by joining Green Lights now and accelerating implementation of lighting-efficiency upgrades. As a Green Lights Partner, you will, with EPA support, conduct lighting surveys of

your buildings and implement lighting upgrades where profitable. Existing Green Lights participants, now numbering more than 1,600, have realized average returns of 30-40 percent on their investments in energy-efficient lighting and are contributing to reductions in emissions of pollutants associated with global warming, acid rain, and smog.

For more information about the Energy Star Buildings program and the Green Lights program, please contact:

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