





Energy Efficiency 101


ENERGY STAR® Resources for the Hospitality Sector

 Learn more at energystar.gov

What is ENERGY STAR?



- Voluntary climate protection partnership with EPA
- Strategic approach to energy management, promoting energy efficient products and practices
- Helps organizations save money and protect the environment
- Influential brand recognized by over 75 percent of Americans



ENERGY STAR Hospitality Partners



Over 130 Partners, including...







































Available ENERGY STAR Resources



- Guidelines for Energy Management
- Benchmarking to Measure and Track Progress
- Tools and Resources
 - Financial calculators
 - Building Upgrade Manual
 - “Putting Energy Into Profits” guide for small businesses
 - Trainings
 - Communications materials and guidance
- Recognition Opportunities



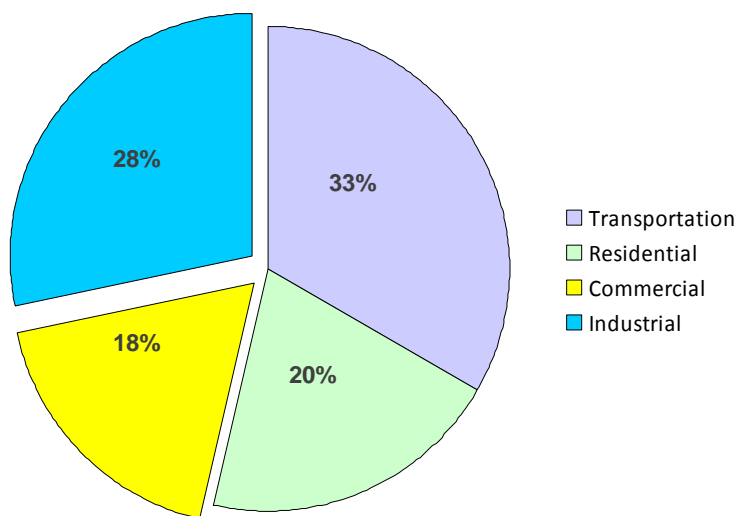
Polling Question Number One



- Of the following choices, which contributes the most to U.S. greenhouse gas emissions each year?
 - A. Homes
 - B. Commercial and industrial buildings
 - C. Cars



U.S. Carbon Dioxide Emissions by Sector



Lodging Industry Environmental Impact



- Annual energy consumption
 - 69 billion kWh of electricity
 - 208 billion cubic feet of natural gas
- Equivalent to the annual greenhouse gas emissions from nearly **ten million cars**
- A **10% reduction** in lodging industry energy consumption would be equivalent to
 - Taking almost 1 million cars off the road for 1 year
 - Offsetting the annual electricity consumption of more than 730,000 homes



Energy Expenditures in the Lodging Industry



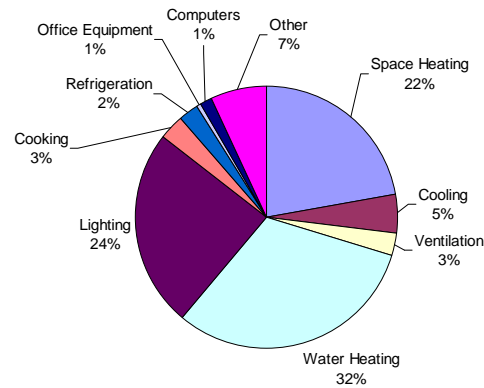
- 5th largest commercial energy consumer
- Spend \$7.5 billion per year on energy
- Utility costs rose 3.6% in 2008
- Lighting, space conditioning, & water heating account for more than 75% of energy costs



Distribution of Energy Use in an Average Hotel



Breakdown of Total Fuel Consumption Across U.S. Lodging Properties



Source: CBECS 2003, Table E1A. Major Fuel Consumption (Btu) by End Use for All Buildings

Why Does Energy Efficiency Matter?



- Energy consumption is the largest component of a building's environmental impact
- Businesses that are leaders in energy efficiency use 35% less energy and emit 35% less carbon dioxide (CO₂) than competitors
- State and local legislation increasingly focused on energy efficiency



Why Does Energy Efficiency Matter? cont'd.



- Energy consumption is one of the single largest controllable costs at your hotel
- Financial returns from efficiency efforts can be leveraged for future “green” investments



Energy Decisions are Business Decisions

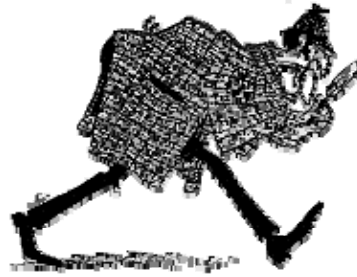


Enhanced energy performance leads to reduced operating expenses and...

- Better equipment operation and extended life
- Potential labor cost savings
- Greater comfort and satisfaction for hotel guests
- Enhanced image by emphasizing environmental protection



Where Do I Begin?




4 Key Steps to Improved Energy Management



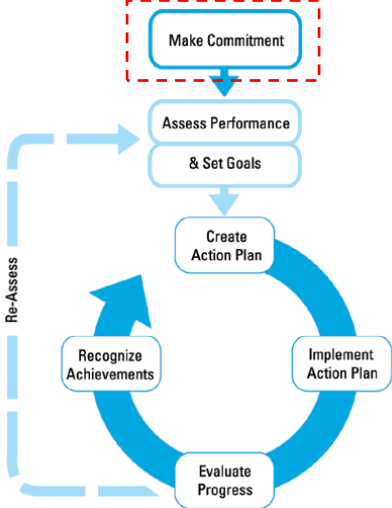
1. **Get started:** join ENERGY STAR, establish your commitment to improved energy performance, and begin developing a strategy
2. **Assess current performance:** measure your energy performance with Portfolio Manager and set goals for improvement
3. **Pursue savings:** implement your plan and track performance against goals
4. **Communicate with staff and guests:** promote your efforts and earn recognition for achievements




1. Get Started




- ENERGY STAR offers free, online tools and resources
 - Unbiased technical assistance
 - Small business energy-efficiency “success stories”
 - Comprehensive guidance
 - *Guidelines for Energy Management*
 - *Putting Energy into Profits*
 - *Facility Energy Assessment Matrix*

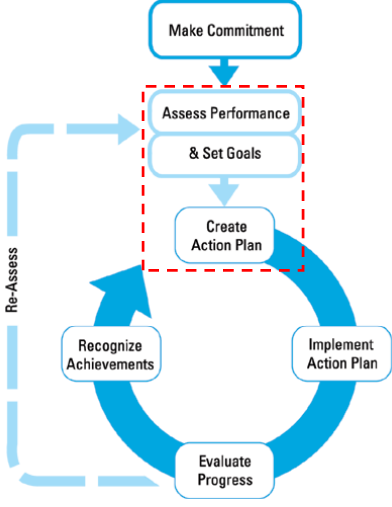





2. Assess Current Performance




Begin benchmarking your energy performance with ENERGY STAR’s online tool, [Portfolio Manager](#)







Why is Portfolio Manager Important?




Is 10 MPG high or low for this automobile?




Fuel Efficiency (MPG)




Is 90 kBtu/SF/YR high or low for this hotel?




Energy Performance Rating (1 – 100)






Why Benchmark Using Portfolio Manager?



- Track cost, energy and emissions savings and measure progress toward goals
- Compare your hotel against a national sample of similar buildings
- Assess effectiveness of current operations, policies, practices
- Track, verify, and recognize achievements
- Document role in environmental protection and demonstrate success
- Comply with state and local requirements for energy performance disclosure (becoming more frequent)



Benchmarking Using Portfolio Manager in Puerto Rico (Total Building Portfolio)



By the end of 2008- 36 buildings in Puerto Rico representing 7 million sq. ft. of space had benchmarked.

By the end of 2009- 75 buildings representing 9.4 million sq. ft. of space had benchmarked .



Polling Question Number Two



How many of you in the room work at a hospitality facility that has benchmarked?



Benchmarking in the Hospitality Sector in Puerto Rico



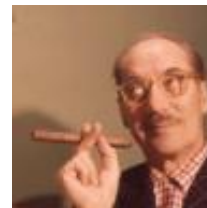
There are an estimated 200 hospitality facilities in Puerto Rico. ENERGYSTAR estimates that the number of facilities that may have benchmarked is around 10 or 5% of the total.




Q: Can we do better ?



A: With possibly 95% of the facilities in the sector remaining to benchmark, you bet your life!



Data You'll Need to Collect



General

Address

Year Built

Space

Gross floor area

Rooms

Workers on main shift

Commercial refrigeration freezer units


% Gross sf heated

% Gross sf cooled


Presence of cooking facilities

Energy



12
consecutive
months for
each
energy type

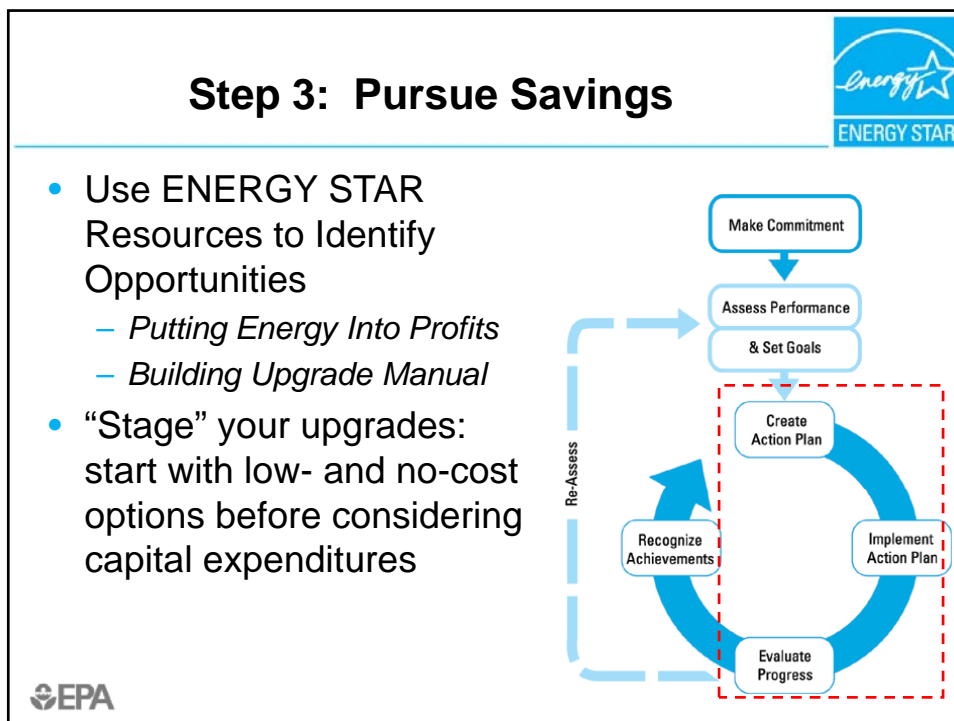
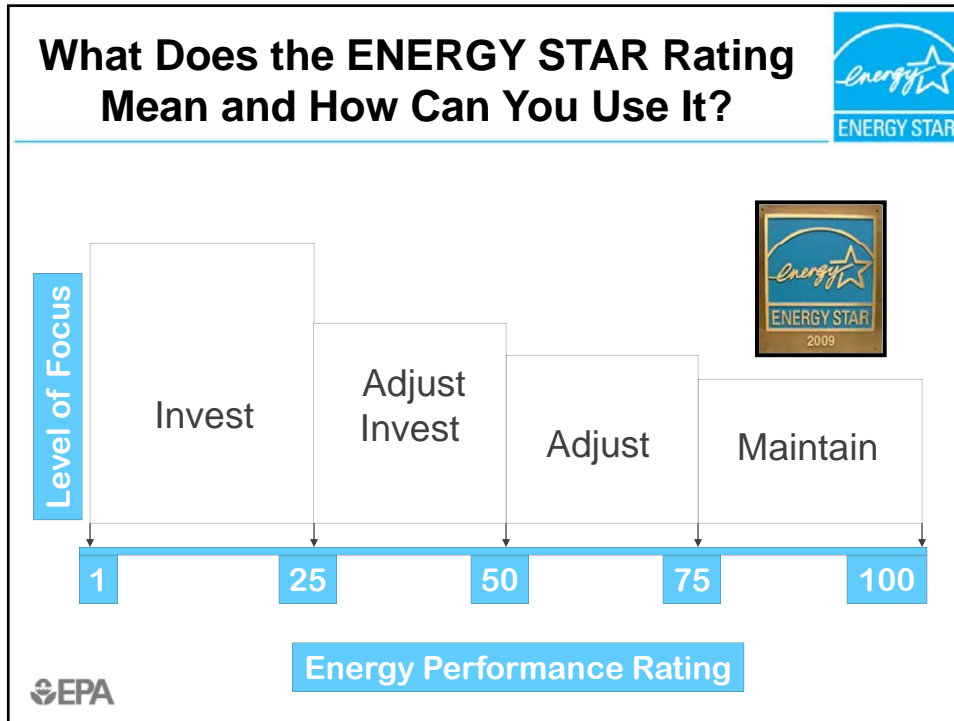


How Much Time Does Benchmarking Take?



- If you have the data needed for input, ENERGYSTAR estimates that the initial benchmarking process takes less than one hour.
- Monthly updating could take as little as five minutes.



Best Practices: Focus on a *Strategic* Approach to Upgrades

Begin with the activities that can achieve early wins at lower costs!



Operations & Maintenance



Training & Communications



Lighting Upgrades



ENERGY STAR Products




Equipment



“Sure Energy Savers”

- Remind housekeeping to turn off guest room lights, TVs, and radios when rooms are unoccupied.
- Change or clean HVAC filters monthly.
- Install and maintain caulk or weather-stripping for doors, windows, and Packaged Terminal Air Conditioner cutouts to reduce air leaks.
- Check and calibrate thermostats
- Install programmable heating/air-conditioning (HVAC) thermostats where appropriate.
- Institute a towel and linen reuse program



“Sure Energy Savers”



- Replace incandescent light bulbs with compact fluorescent lights (CFLs), where possible.
- Install LED (light-emitting diode) exit signs.
- Install occupancy or vacancy sensors in common areas
- Keep exterior lights off during daylight hours
- Take advantage of free “day-lighting” where possible
- When replacing equipment, seek out ENERGY STAR qualified products



Step 4. Communicate with Staff and Guests



The Challenge Toolkit contains:

- Co-brandable posters and ads
- Brochures
- Fact sheets
- Key messages
- Web banners
- Templates for press releases



<http://www.energystar.gov/challengekit>



Pursue Recognition Opportunities





Building Label



Building Profile



Leaders



Small Business Awards



ENERGY STAR Labeled Building Profiles





ENERGY STAR Labeled Building Profile

Bozeman Wingate Inn
2305 Catron Street
Bozeman, MT 59718

In the fall of 1997, the owners of Bozeman's Wingate Inn met to discuss the development of what would soon become one of the Gallatin Valley's premier hotel properties. A top priority on their agenda was to investigate energy efficiency opportunities available in the Montana market. To get started, the managing partner of the Wingate Inn contacted Montana Power, which was eager to help in the investigation and design of a highly-efficient HVAC system.

What followed were months of interaction between Wingate Inn, Montana Power, and Energy Engineering, the developers of an Interrogated Pipe System (IPS) heating and air conditioning system that was, at the time, in limited use among hotel properties.

The IPS works by assigning "double duty" to a building's piping - tapping the fire sprinkler piping to also serve as chilled water piping, and the domestic hot water system to also provide heating. The piping is then, in the case of a hotel, controlled by a wall-mounted thermostat in each guest suite.

The owners of Wingate Inn were impressed by the potential energy and dollar savings of the IPS, the latter of which was projected to be approximately \$31,000 net per year, with a simple payback calculated at just over one year. After much discussion and research, Energy Engineering was commissioned to design the Wingate Inn's IPS. Shortly thereafter, this upgrade, as well as dedicated operations and maintenance practices, contributed to the hotel's eligibility to become an ENERGY STAR label building.

Wingate Inn of Bozeman opened in April 1999, with the electrical and maintenance savings garnered by the IPS paying for the initial added cost of the system within one year. Energy and cost savings have continued to surpass projections each year since, and, most importantly, customers continue to give the HVAC system's quiet and comfortable operation rave reviews.

Building Owner:
Rocky Mountain Wingate

Property Manager:
N/A

Year(s) Labeled (Rating):
2002 (95)

Facility Type: Hotel

Total Floorspace: 54000 sf

Year Constructed: 1999

Energy Intensity: 99.4 kBtu/sqft/yr

Contract Type: Performance Contract

Financing Type: Internal Capital

Technologies Used:


- Stage 2 Lighting
- Electronic Ballasts
- Other Technologies/Strategies
- Co-Generation

For More Info:
 Steve Sparks
 Bozeman, MT 59718
 406-582-4925
11123@hotel.cendant.com



Online Travel Sites Now Marketing "Green" Properties





ECO-TOURISM

Overview [View Destinations](#)

Introduction to Eco-Tourism

Orbitz is committed to protecting Planet Earth, by helping raise environmental awareness and by making it easier to be an eco-friendly traveler:

- **Fast Booking** that have earned the EPA's ENERGY STAR for using nearly 40 percent less energy than average buildings and emitting 30 percent less carbon dioxide into the atmosphere.
- **Reserve a Green Property** at:
- **Orbitz, Eco-Friendly Lodging** through our partner, EarthKarma.org.
- **Find out what you can do to go green** with [EcoKarma.org](#).
- **Locations** to help create one of America's national parks. So much green when you plan your next trip, and make every day of your journey an Earth Day.

NEW! HYBRID RENTALS
Go Green, Save Green

Eco-Friendly Hotels

Start considering an eco-friendly hotel when you travel. Many lodging properties use wind and solar power as energy sources or purchase only environmentally-friendly products, such as "green" detergents for linens and soaps. Hotels around the world are doing their part to help you minimize your impact on the environment on your next trip. Based on Orbitz research, we think these hotels deserve some recognition.

Check out our growing list of "green" hotels.

Find hotels by state: [Eco-Friendly Hotels Criteria](#)


[Rockwater Marriott, Rockwater, NJ](#) • [Hamilton Park Hotel, Pompano Park, NJ](#) • [Newark Liberty International Airport Marriott, Newark, NJ](#) •

Eco-Friendly Hotel Criteria:

- Use a natural source of energy (i.e. wind, water, solar, bio-fuel)
- Use environmentally-friendly and safe products (i.e. detergents for linens, soaps, shampoos, etc.)
- Contribute \$\$ from each hotel reservation to an environmental organization
- Use of energy conserving devices (i.e. eco-friendly light fixtures/bulbs triggered by motion detectors, water-saving devices, water filtration systems and air filtration/purifiers)
- Earned the ENERGY STAR

 Orbitz is proud to recognize hotels that have earned the ENERGY STAR, indicating that they are among the top 25% of facilities in the country for energy performance. Click here for more information about the ENERGY STAR program www.energystar.gov.

Hotels interested in learning how to track energy performance and the related carbon emissions should visit ENERGY STAR's easy-to-use Portfolio Manager tool at <http://www.energystar.gov/PortfolioManager>



Online Travel Sites Now Marketing "Green" Properties, cont'd.





The Green Directory - Travel Responsibly

Exploring the corners of the earth and embracing other cultures can enrich lives and inspire healthy change, but being aware of and taking steps to reduce the environmental impact of our journeys are equally important. With our Green Directory we hope to connect travelers to options that will help to diminish the footprint their trips leave on the planet by featuring environmentally-friendly hotels and destinations, as well as offering our customers tips on responsible travel, eco-travel based reviews from fellow travelers, and the opportunity to request your track support through carbon offsets.

Hotels

Hotel Terra
At Hotel Terra Jackson Hole, every decision is weighed with considerations of sustaining the environment while maintaining a luxurious experience for its guests.

[Read More](#)

Partners

Kimpton
Environmental responsibility is a long-term commitment at Kimpton. Every three months, new products and practices are introduced to further reduce their impact on the planet. Sleep easy when you choose Kimpton boutique hotels.

[Read More](#)

Featured Green Properties

- USA
- Asia Pacific
- East Coast
- West Coast
- Europe
- Mexico/Caribbean/Latin America/South America

How did we establish this list?



Available Resources



- Step 1: Getting Started
 - Learn more about ENERGY STAR resources for hotel owners and operators:
http://www.energystar.gov/index.cfm?c=hospitality.bus_hospitality
 - Learn about ENERGY STAR for Small Business:
http://www.energystar.gov/index.cfm?c=small_business.sb_index
 - Join ENERGY STAR:
http://www.energystar.gov/index.cfm?c=small_business.sb_partner_info_form
 - ENERGY STAR Guidelines for Energy Efficiency:
http://www.energystar.gov/index.cfm?c=guidelines.guidelines_index



Available Resources



- Step 1: Getting Started, cont'd.
 - ENERGY STAR Small Business Guide: "Putting Energy Into Profits":
http://www.energystar.gov/ia/business/small_business/sb_guidebook/smallbizguide.pdf
 - Facility Energy Assessment Matrix:
http://www.energystar.gov/ia/business/guidelines/Facility_Energy_Assessment_Matrix.xls
 - Energy Program Assessment Matrix:
http://www.energystar.gov/ia/business/guidelines/assessment_matrix.xls
 - "Teaming Up to Save Energy" Guide:
http://www.energystar.gov/ia/business/guidelines/continuous_improvement/Teaming_Up_To_Save_Energy.pdf



Available Resources



- Step 2: Assess Current Performance
 - Portfolio Manager Login:
<https://www.energystar.gov/istar/pmpam/>
 - Background Information on Portfolio Manager:
<http://www.energystar.gov/benchmark>
 - Benchmarking Trainings (live and recorded):
<http://energystar.webex.com>
 - Hospitality Benchmarking Starter Kit:
http://www.energystar.gov/index.cfm?c=hospitality.bus_hospitality_bm_starter_kit




Available Resources




- Step 3: Pursue Savings
 - ENERGY STAR Building Upgrade Manual:
http://www.energystar.gov/index.cfm?c=business.bus_upgrade_manual
 - ENERGY STAR Small Business Guide: "Putting Energy Into Profits":
http://www.energystar.gov/ia/business/small_business/sb_guidebook/smallbizguide.pdf
 - Information on ENERGY STAR Qualified Products (including savings calculators):
http://www.energystar.gov/index.cfm?fuseaction=find_a_product



Available Resources



- **Step 4: Communicate with Staff and Guests**
 - ENERGY STAR Challenge: <http://www.energystar.gov/challenge>
 - ENERGY STAR Challenge Toolkit: <http://www.energystar.gov/challengekit>
 - Information on the ENERGY STAR Label: http://www.energystar.gov/index.cfm?c=business.bus_bldgs
 - Information on ENERGY STAR Leaders: http://www.energystar.gov/index.cfm?c=leaders.bus_leaders
 - Information on ENERGY STAR Small Business Awards: http://www.energystar.gov/index.cfm?c=sb_success.sb_winners
 - State and Local Legislation and Initiatives Leveraging ENERGY STAR: http://www.energystar.gov/ia/business/government/State_Local_Govts_Leveraging_ES.pdf



A su servicio



Joe Bergstein
EPA Region 2
212-637-3890
bergstein.joseph@epa.gov

Anna Stark
Program Manager
ENERGY STAR Commercial Properties
US EPA
(202) 343-9184
stark.anna@epa.gov

Andrew Schulte
ICF International
9300 Lee Highway
Fairfax, VA 22031
(703) 934-3201
aschulte@icfi.com

