



US EPA's ENERGY STAR[®]

Energy Conservation for Colleges and Universities

February 8, 2005

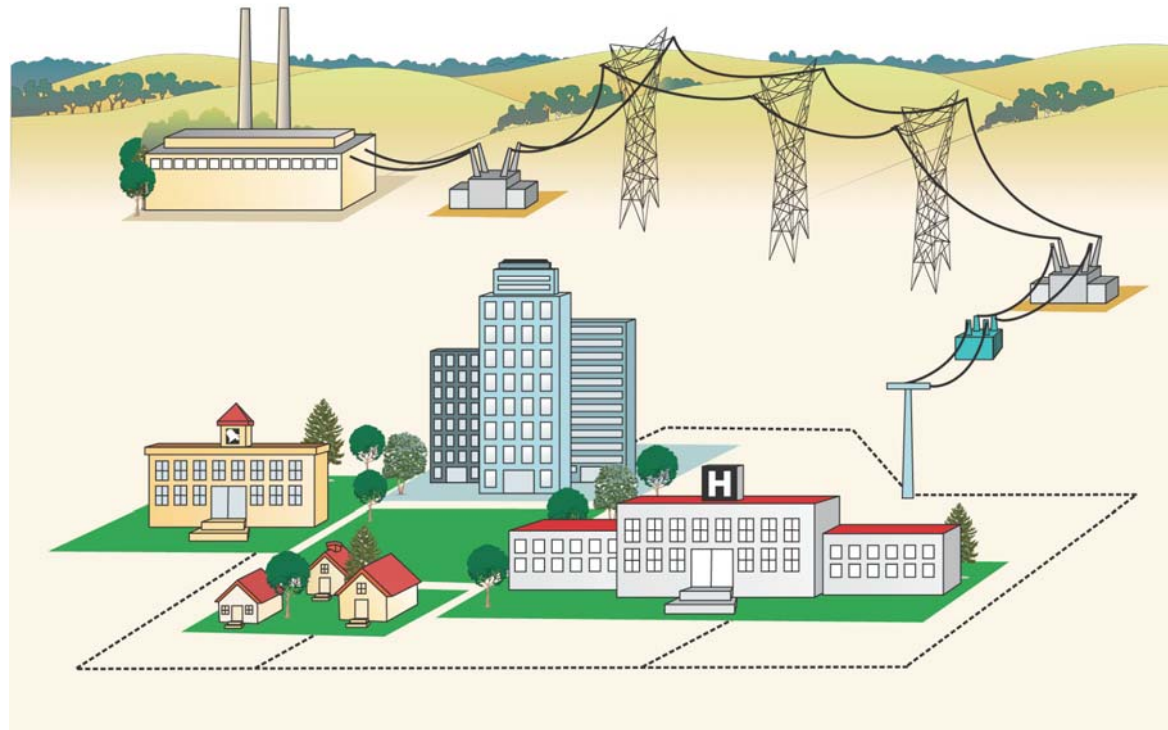
Presented in conjunction with the Georgia Department of Natural
Resources Pollution Prevention Assistance Division

The National Challenge — Eliminate Energy Waste



Energy waste at work and at home will cost U.S. organizations and consumers billions of dollars in the next 10 years.

Wasted energy contributes to smog, acid rain, and greenhouse gas emissions.



The Power of ENERGY STAR



In 2002, with the help of ENERGY STAR, Americans saved enough energy to power 15 million homes and reduce the greenhouse gas emissions equivalent to those of 14 million cars — all while saving \$7 billion.



A voluntary partnership between organizations, businesses, consumers, and government, united in the pursuit of a common goal — **to protect our environment for future generations by changing to energy-efficient products and practices today.**

Georgia and ENERGY STAR



- Georgia is home to more than 250 companies and public entities participating in ENERGY STAR, one-third of which are small businesses.
- 15 manufacturers of ENERGY STAR qualified products are located in Georgia.
- Consumers can purchase ENERGY STAR qualified products at more than 590 retail locations throughout the state.
- More than 250 homes in Georgia have earned the ENERGY STAR.
- Statewide more than 25 companies build, provide third-party testing of, or promote ENERGY STAR qualified new homes.
- 23 office buildings and 13 supermarkets in Georgia have earned the ENERGY STAR.
- Investments already made through ENERGY STAR in Georgia will prevent 90 billion pounds of carbon dioxide (CO₂). This reduction in CO₂ emissions is equivalent to planting 12.4 million acres of trees.
- Nitrogen oxide (NO_x) emissions will be reduced by 180 million pounds due to existing ENERGY STAR investments in Georgia.

Energy Challenges Facing Colleges and Universities



- Growing Demand
- Variable Rates
- Financing Upgrades
- Limited Budgets

Campus Energy Efficiency



You can do more & ENERGY STAR can help.

- Become an ENERGY STAR partner and join the 7,000 organizations nationwide that saved \$7 billion in 2002 through energy efficiency.
- Show your energy, financial, and environmental leadership.
- Be a role model for your peers.

Go to www.energystar.gov and click on Join ENERGY STAR

ENERGY STAR



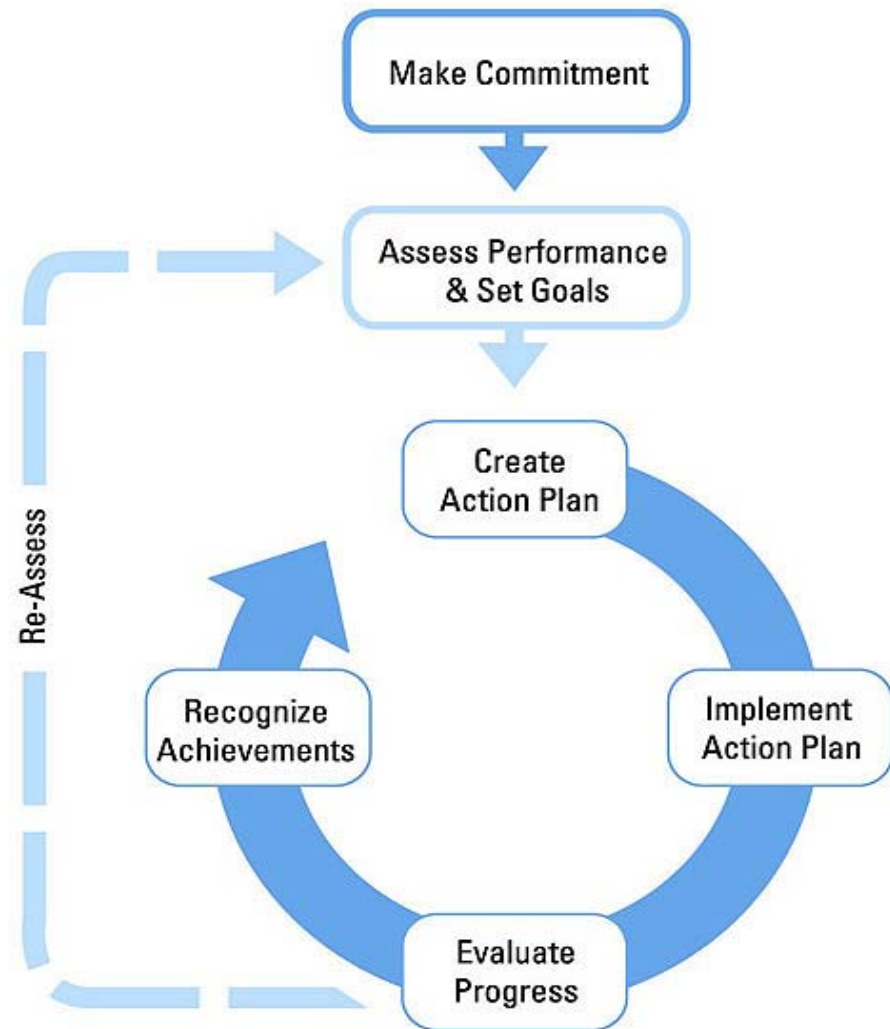
Helps your campus:

- Reduce energy use
- Save money every month
- Prevent pollution

Energy Management Strategy



At every stage,
ENERGY STAR
can assist you in
implementing
your energy
management
strategy.



ENERGY STAR Offers



Web resources and tools

- Technical support
- Financing advice
- Training presentations
- Recognition: achievement awards
- ENERGY STAR label for top performance



Provides the following staff with resources to promote and implement energy efficiency measures campus wide:

- Facilities Management Team
- Purchasing Group
- IT Specialists
- Finance & Budgeting Staff
- Campus Architect & Design Team
- Communications Team

Resources for Facilities Management

Sub-Metering White Paper



Covers financial, engineering and management benefits, such as:

- More accurate cost allocation
- Identifying dramatic change of energy use in buildings
- Easier comparison of buildings' energy use and costs

Learn more: www.energystar.gov

Resources for Facilities Management Portfolio Manager



Colleges and universities that sub-meter can now use EPA's Portfolio Manager to:

- House building energy data
- Measure building energy use
- Track energy savings over time
- Set building performance goals and prioritize upgrade work

Resources for Facilities Management Portfolio Manager



PORTFOLIO MANAGER

ACCOUNT INFORMATION
 FACILITIES
 CONTRACTS
 HELP
 LOGOUT

[Home](#) > [My Portfolio](#)

Welcome: Jane Doe

Summarized below are the facilities in your account. Groups and Views are provided below to help you customize the way in which you view your Portfolio. To improve system performance, users are strongly encouraged to create multiple Groups to help manage large Portfolios of facilities. **Select a facility to view or edit more detailed information about it.**

[Add Facility](#)
[Download this View in Excel](#)

GROUP:	VIEW:						
All Facilities	Status	Create Group View All Create View Edit View View All					
Results 1 - 5 of 5		A B C D E F G H I J K L M N O P Q R S T U V W X Y Z					
Facility Name	Total Floor Space (Sq. Ft.)	Annual Energy Intensity (kBtu/Sq. Ft.)	Rating (LEED)	Energy Use Alerts	Period Ending	End Year	Last Modified
Headquarters	14000	67.3	90	Data > 3 months old	09/31/2003	Yes	12/12/2003
Region 1 Office	9000	45.5	97		11/30/2003	Yes	12/11/2003
Region 2 Office	11000	67	89		11/30/2003	Yes	12/12/2003
Region 3 Office	8500	101.2	54		11/30/2003	Yes	12/12/2003
Region 4 Office	12500	60.8	93		11/30/2003	Yes	12/12/2003
Results 1 - 5 of 5		A B C D E F G H I J K L M N O P Q R S T U V W X Y Z					

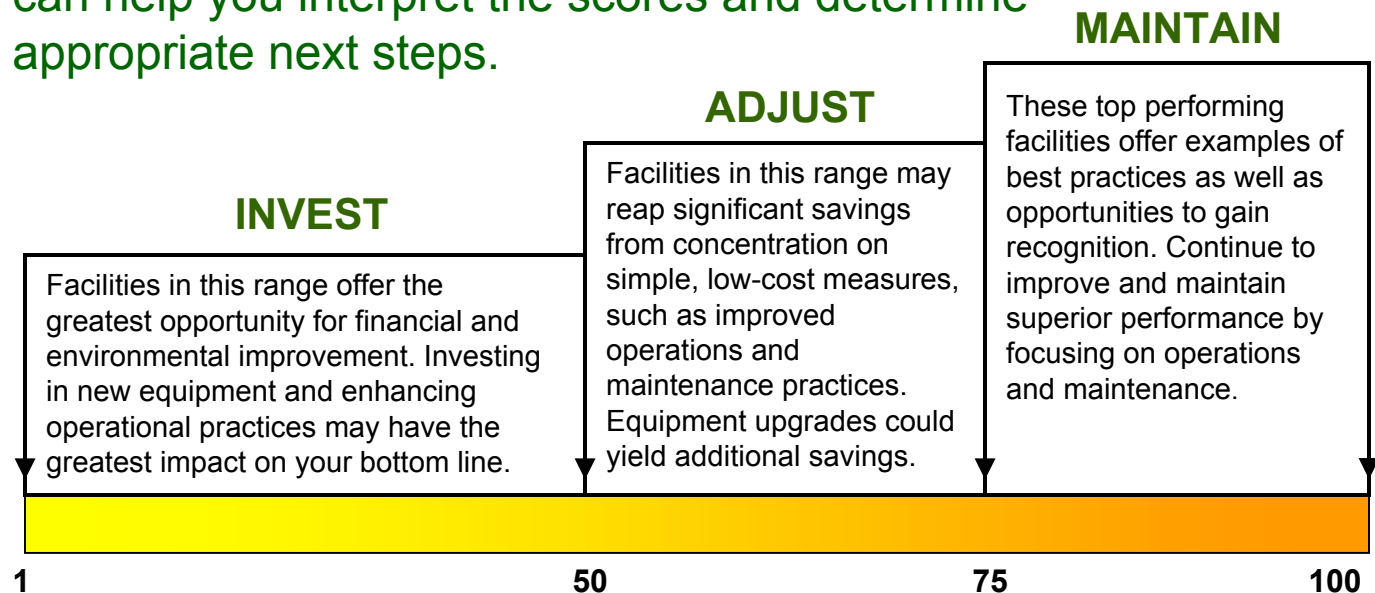
The rating is calculated by using the last day of the latest full calendar month where all meters in the facility have meter entries. The Period Ending date reflects that particular date.

Resources for Facilities Management

Score Interpretation



Once you have established an energy performance baseline rating, you are ready to set improvement goals and create an action plan. The guide below can help you interpret the scores and determine appropriate next steps.



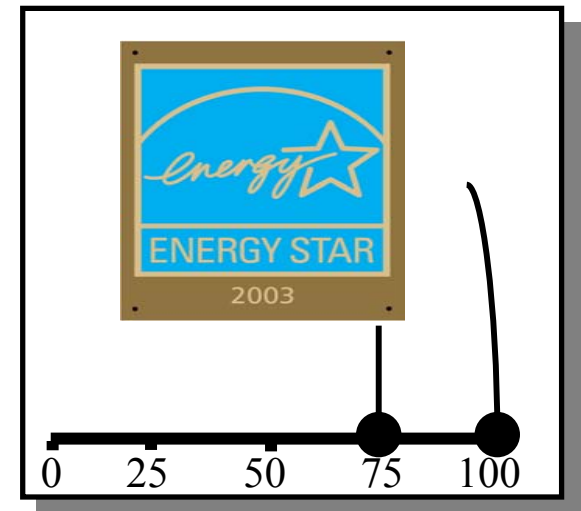
ENERGY PERFORMANCE RATING

Portfolio Manager Results

Earn the ENERGY STAR



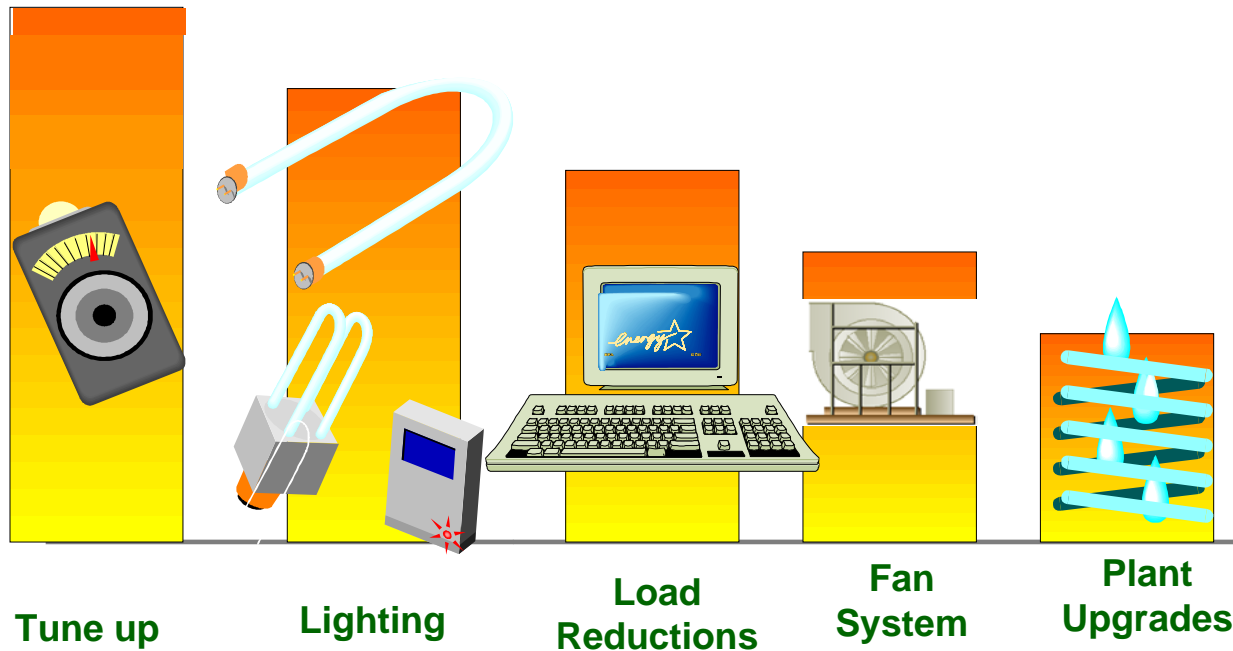
The ENERGY STAR on your campus building means it is a top performer !



Residence halls, administrative offices, hotels, and hospitals that score 75 or better can apply for the **ENERGY STAR**.

Resources for Facilities Management

Five-Stage Approach to Building Upgrades



Continuous Maintenance & Measuring

Resources for Facilities Management

Five-Stage Approach to Building Upgrades



- Assistance in developing a roadmap for building upgrades
- Detailed guidance in the online *Building Manual*
- Example: Duke University has saved \$4.7 million in the past 5 years.

Learn more: www.energystar.gov

Resources for Purchasing Purchasing Qualified Products



Products for your organization earn the ENERGY STAR by meeting strict energy efficiency guidelines set by EPA and DOE.



Examples of ENERGY STAR Qualified Products



Water Coolers

Lighting

Office Equipment

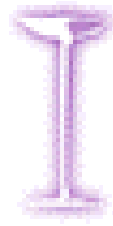
Heating & Cooling Equipment

Transformers

Ventilation Fans

Appliances

Consumer Electronics



more than 40 product categories

Resources for Purchasing Purchasing Tools



- Help your purchasing department:
 - Identify, specify, and purchase ENERGY STAR qualified products
 - Estimate savings with Web calculators
- Download procurement language templates available at www.energystar.gov/purchasing

Learn more: Sign up for the interactive presentation delivered via Internet & conference call

Savings from Bulk Purchasing



- Green Mountain College saves more than 260,000 kWh annually since installing ENERGY STAR qualified light fixtures.
- Starting today the purchasing decisions you make will affect most of your energy use 10 years from now.

Resources for Purchasing ENERGY STAR Showcases



Copyright 2001 Tulane University
Publications Photo by Paula Burch

- Use ENERGY STAR qualified products in showcase spaces (e.g., dorm rooms, offices, libraries)
- Reduce campus-wide plug load when your students, staff, and purchasing dept. buy ENERGY STAR

PC Power Management



- Centrally or locally administered software programs
- Easy and free to install; download at www.energystar.gov/powermanagement
- Harvard University Kennedy School:
 - Enabled 800 monitors in less than 4 hours
 - Saved 160,000 kWh/yr and \$14,000/yr
 - Drop in air conditioning load
 - Recognized at 2003 ENERGY STAR Awards



Learn more: Sign up for the interactive presentation delivered via the Internet & conference call

Performance Contracts & E² Projects: Higher Ed.



Interesting ESCo Stats



- \$2 billion spent annually on Energy Efficiency projects
- Revenues growing at a 24% annualized rate (last 10 years)
- PC projects decreased since 1996 from 92% to 76% of total with a corresponding increase in design/build projects
- 95% of projects included Lighting and/or HVAC
- Lighting only projects report median electric savings of 47%
- Median electricity savings for all projects is 23%
- For all projects, the median investment per ft² is \$2.3/ft
- ~10% projects for Colleges/Universities

From: "Market Trends in the U.S. ESCO Industry: Results from the NAESCO Database" - NAESCO & Lawrence Berkeley National Laboratory - 2002

What Services Can An ESCo Provide?



- Walk-through energy audit
- **Comprehensive energy audit**
- **Design and specification of new equipment**
- **Vendor of energy efficiency equipment**
- **Installation/construction management**
- **Performance guarantees**
- Ongoing maintenance
- Training of personnel
- Measurement and verification of project performance
- Financing
- Indoor Air Quality problems
- Procurement and purchase of energy commodity

Many kinds of “Performance Contracts”



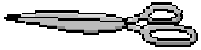
86% of PCs used a Guaranteed Savings Mechanism

What is a Performance Contract



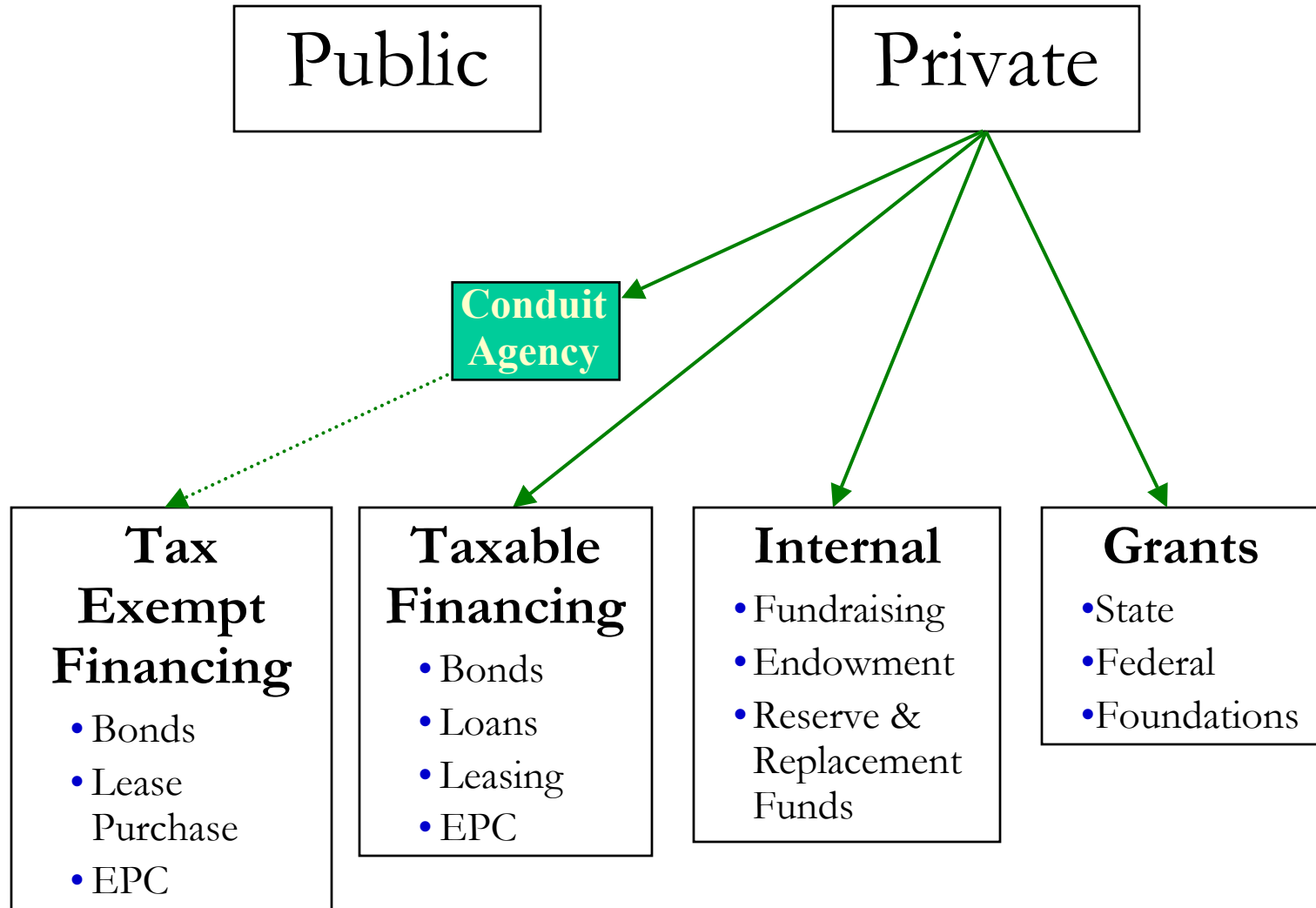
Related but Independent Documents

- Project Development Agreement
- Energy Services Agreement

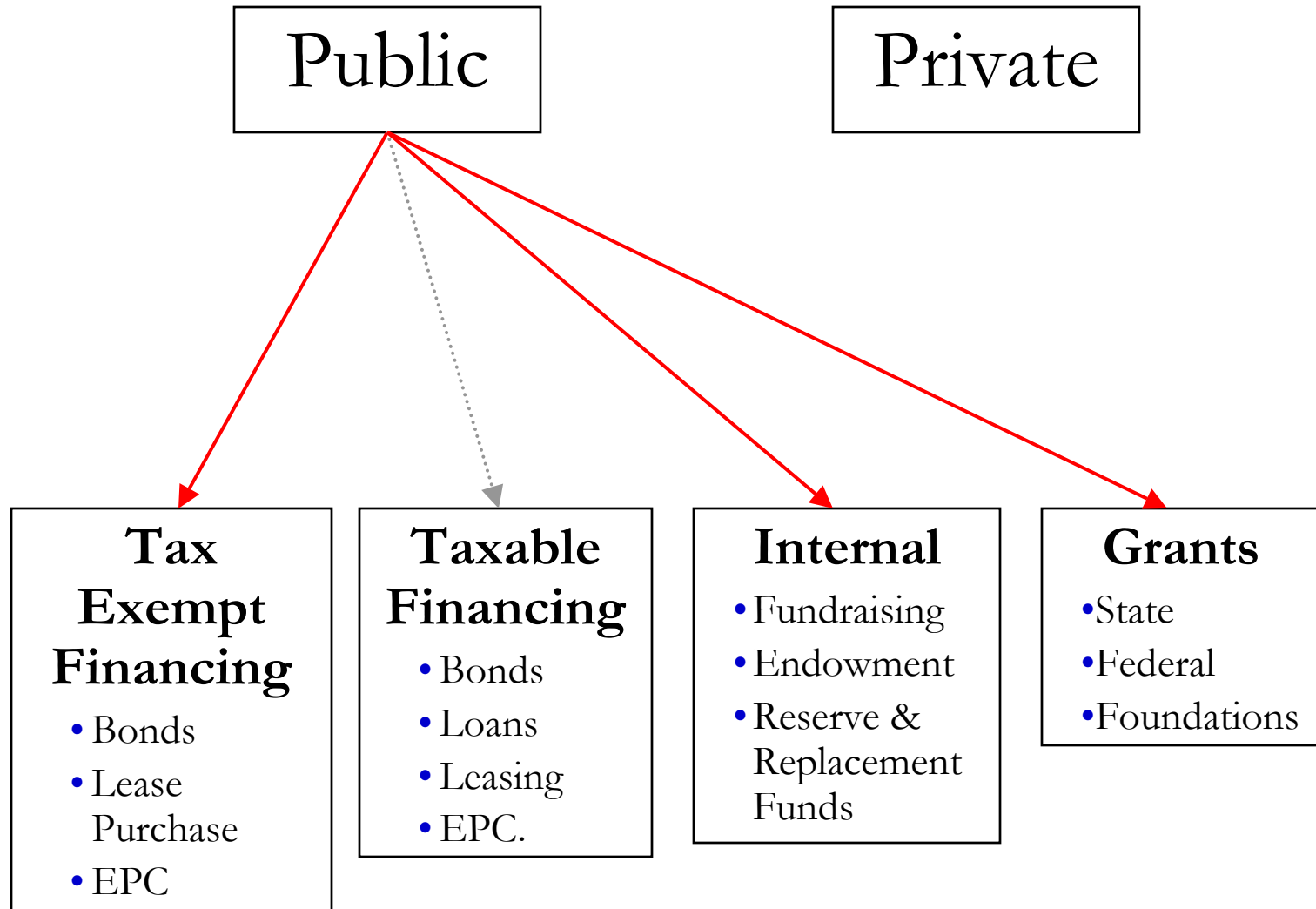


- Finance Agreement

Financing Projects Higher Education



Financing Projects Higher Education



Internal Sources



- Fundraising
 - “The gift that keeps on giving”
- Endowment
 - Use if ROI is greater than existing investments
 - Smaller projects with fast paybacks
- Reserve & Replacement Funds
 - Often included in other financings
 - Must determine eligibility and risk to lender
 - Smaller projects with fast paybacks

Tax Exempt Lease-Purchase Agreements (AKA Municipal Leases)

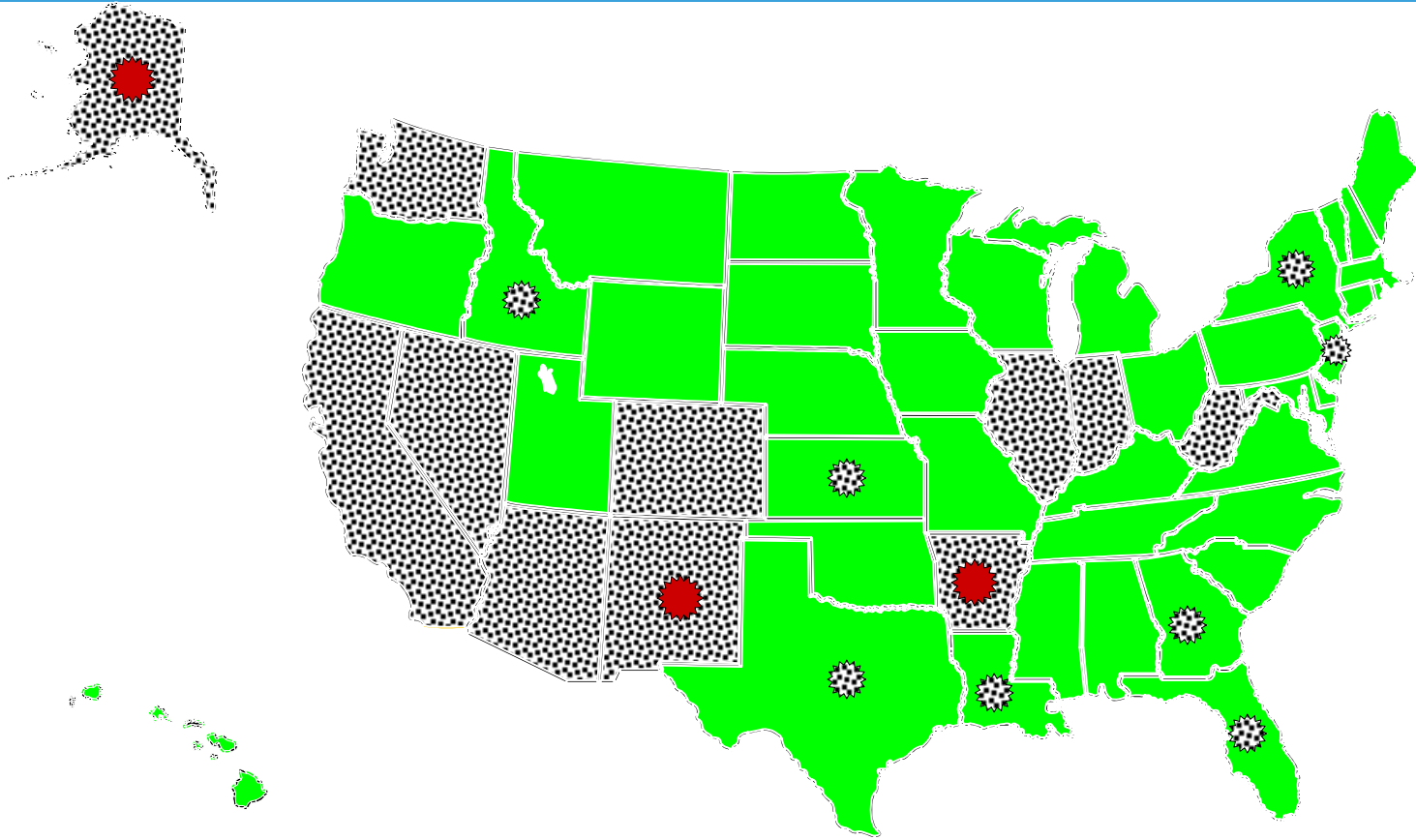





Benefits of Tax-Exempt Lease-Purchase Agreements



- ***Title*** to the Equipment Rests with Lessee
- Access to Low Cost, ***Tax-Exempt Funds***
- Payments may be Subject to ***Annual Appropriation of Funds*** by Lessee (not debt)
- Accommodates ***Construction Financing***
- Payments ***in arrears***
- **Easy and fast**

Tax-Exempt Lease-Purchase Subject to Legislative & Constitutional Limitations



-  Few or no barriers
-  Check with advisors
-  Some legal issues

***An Incomplete Listing
(for illustrative purposes only)***

Resources for Finance & Budgeting

Cash Flow Opportunity Calculator



- Answers three critical questions:
 - How much new energy efficiency equipment can be purchased from anticipated savings?
 - Should the equipment purchase be financed now, or is it better to wait and use cash from a future budget?
 - Is money being lost by waiting for a lower interest rate?
- Download: www.energystar.gov







ENERGY STAR Design Guidance

- Guides you through new building design as a collaborative process
- Helps your architect and design team set an energy performance target for each new campus building
- Available at www.energystar.gov/newbuildingdesign

Resources for the Design Team

Target Finder



 **TARGET FINDER**  PRINT  CONTACT US  HEL

[Return to ENERGY STAR Web site](#) > Target Finder

Target Finder

*** REQUIRED**
Select a Target Score and/or compare your Design Energy to the target.

1. Facility Information

* Zip Code -OR- Country

Facility Name

City State

2. Facility Characteristics

* Select Space Type(s) for this project.

3. Target Score

* Select desired target score from energy performance rating scale.
Select "View Results" to display associated energy use intensity.

Target Finder



- Try the quick online tool “Target Finder”
 - Select your target score (50 to 100), and Target Finder determines the kBtu/sf/yr (EUI)
 - Input your estimated kBtu/sf/yr, and Target Finder shows you its performance score

Learn more: Sign up for the interactive presentation delivered via Internet & conference call



- Show your commitment and progress to staff, community, students & alumni
- ENERGY STAR's communication tools
 - The ENERGY STAR Logo
 - Recognition for achievements
 - Templates on line
 - Brochures and fact sheets

Resources for Communications & PR

Partner Recognition



- ENERGY STAR Higher Education Monthly Newsletter
 - Recognizes partner energy efficiency efforts
 - Provides ENERGY STAR news
- Recognition for Leaders
- Annual ENERGY STAR Awards

Resources for Communications & PR

Partner Recognition

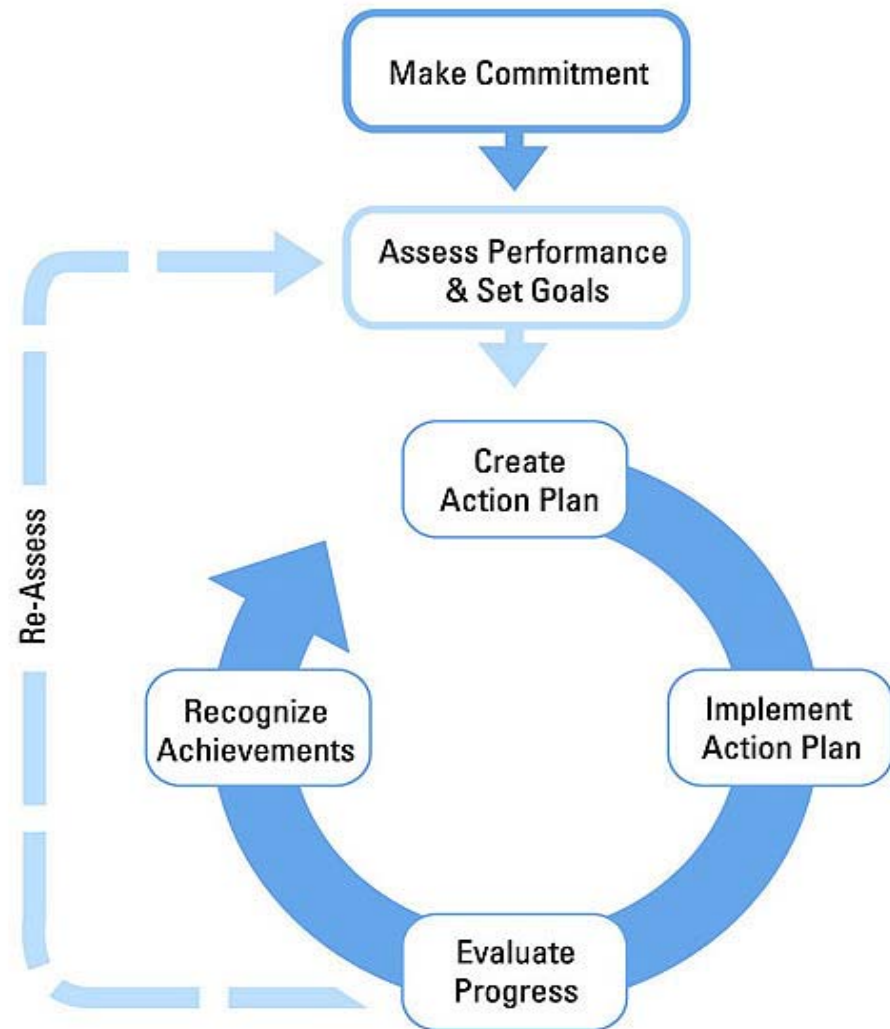


2004 ENERGY STAR Award: University of Michigan

Energy Management Strategy



At every stage,
ENERGY STAR
can assist you in
implementing
your energy
management
strategy.





- Portfolio Manager
- Financing Energy Efficiency Upgrades
- CFO Calculator
- Purchasing Energy-Efficient Products
- Monitor Power Management
- New Building Design

Register at www.energystar.gov

ENERGY STAR

Information Sources



- www.energystar.gov
- 1-888-STAR-YES (1-888-782-7937)
- Katy Hatcher
ENERGY STAR Manager, Public Sector
US Environmental Protection Agency
hatcher.caterina@epa.gov
- Danny Orlando
EPA Region 4, 404-562-9087,
orlando.danny@epa.gov

Resources are available online

ENERGY STAR Higher Education Web Page



The screenshot shows the ENERGY STAR website's navigation and content for higher education. At the top, there is a search bar and a navigation menu with categories: PRODUCTS, HOME IMPROVEMENT, NEW HOMES, BUSINESS IMPROVEMENT, PARTNER RESOURCES, and WHAT IS ENERGY STAR? NEWS ROOM. The main heading is "ENERGY STAR For Higher Education". The text describes the benefits of partnering with ENERGY STAR, such as lowering energy bills and saving money for repairs. A sidebar on the left contains various links like "Energy Management Strategy", "Tools & Resources", "Partner List", "Find Labeled Buildings", "Find Expert Help", "Small Business", "Education", and "Real Estate". A sidebar on the right includes "K-12 Schools", "Success Stories" (with a link to University of Missouri-Columbia), "ENERGY STAR Higher Education Partners", "News", and "Higher Education Newsletter".

ENERGY STAR® ENVIRONMENTAL LEADERSHIP ADDS VALUE TO YOUR BOTTOM LINE AND CORPORATE REPUTATION

SEARCH

Environmental leadership adds value to your bottom line and corporate reputation

PRODUCTS **HOME IMPROVEMENT** **NEW HOMES** **BUSINESS IMPROVEMENT** **PARTNER RESOURCES** **+ WHAT IS ENERGY STAR? NEWS ROOM**

[Home](#) > [Business Improvement](#) > [Higher Education](#)

ENERGY STAR For Higher Education

Partnering with ENERGY STAR is a commitment to your students and faculty as well as the environment.

Colleges and universities spend close to \$2 billion each year on energy (ref: EIA 1995 CBECS higher education data, apportioned to higher education using square footage, converted to 2002 dollars). Adopting a strategic approach to energy management can lower your energy bills by 30% or more. ENERGY STAR brings you a proven energy management strategy to distinguish your institution as an environmental leader and save money for repair and renovation, hiring of new faculty, new construction, and other core activities.

Be Strategic About Energy Management

- + [An Overview](#)
- + [Implement an Energy Management Strategy](#)

Use the ENERGY STAR Partnership

- + [Join ENERGY STAR](#)

K-12 Schools

Success Stories
[University of Missouri-Columbia ENERGY STAR Partner of the Year](#)

ENERGY STAR Higher Education Partners

News
[Performance Contracting: College cited for conservation efforts](#) [EXIT](#) ↔

Higher Education Newsletter

Energy Management Strategy

Tools & Resources
+ [Portfolio Manager](#)
+ [Target Finder](#)

Partner List
[Join Now](#)

Find Labeled Buildings

Find Expert Help

Small Business

Specific Organizations & Businesses

Education
+ [K-12](#)
+ **Higher Education**

Real Estate
+ [Commercial](#)
+ [Corporate](#)

A photograph showing a close-up of a building's exterior, featuring a classical architectural element like a column capital and a window frame.



Colleges and universities have the opportunity and the power to make a change for the better with ENERGY STAR.