



# Benchmarking Building Energy Performance: A National Perspective from ENERGY STAR®

CEE Ask the Experts Workshop  
Tracy S. Narel  
June 2, 2009

# Overview

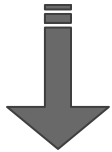


- ENERGY STAR and EPA performance rating in the market
- Utilities can use benchmarking to
  - Acquire new energy efficiency customers
  - Build customer relationships
  - Motivate repeat customers
- Going further

# Standardized Measurement: Enables ENERGY STAR Strategy



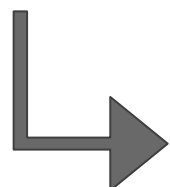
Estimate energy use at design and set goal



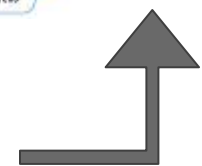
Verify energy use in operation



Monitor progress to manage energy better



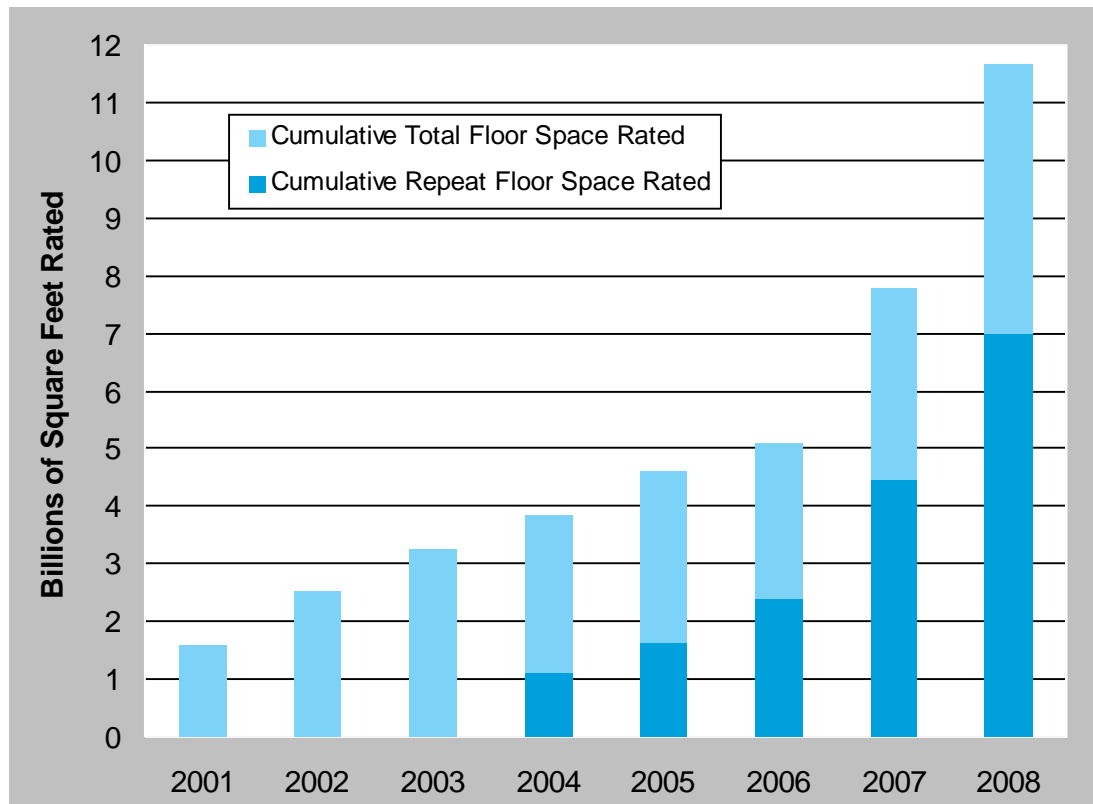
Standardized metrics enables strategies, consistency



# EPA Rating in the Market



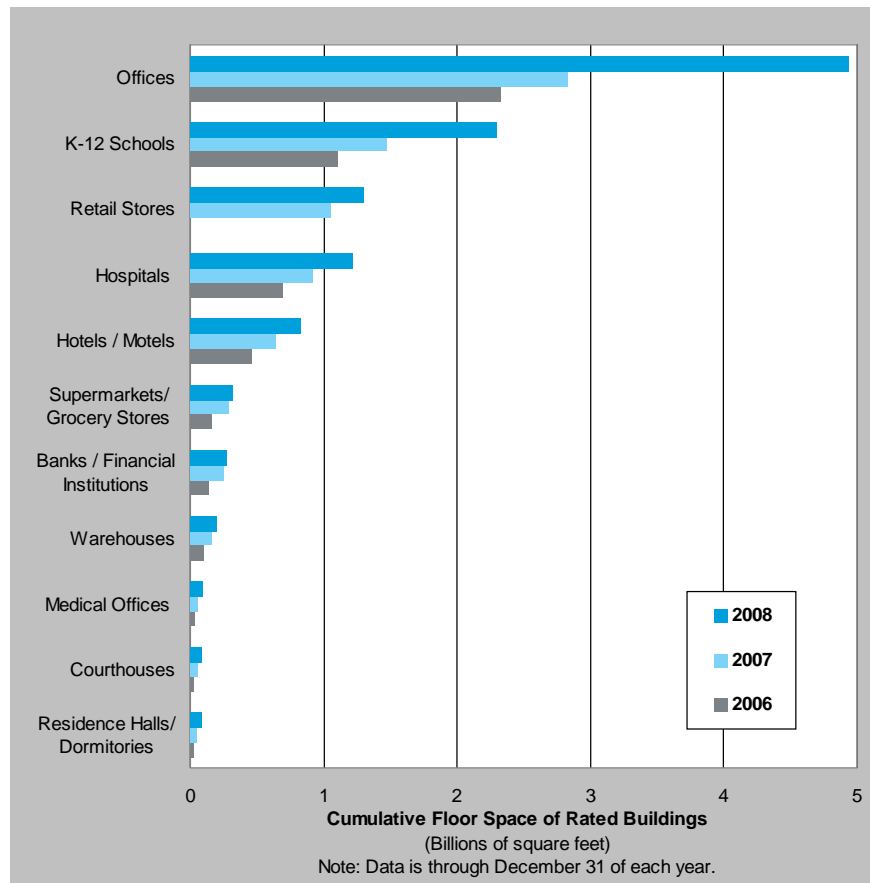
## Cumulative Floor Space Rated through December 31, 2008



# EPA Rating in the Market



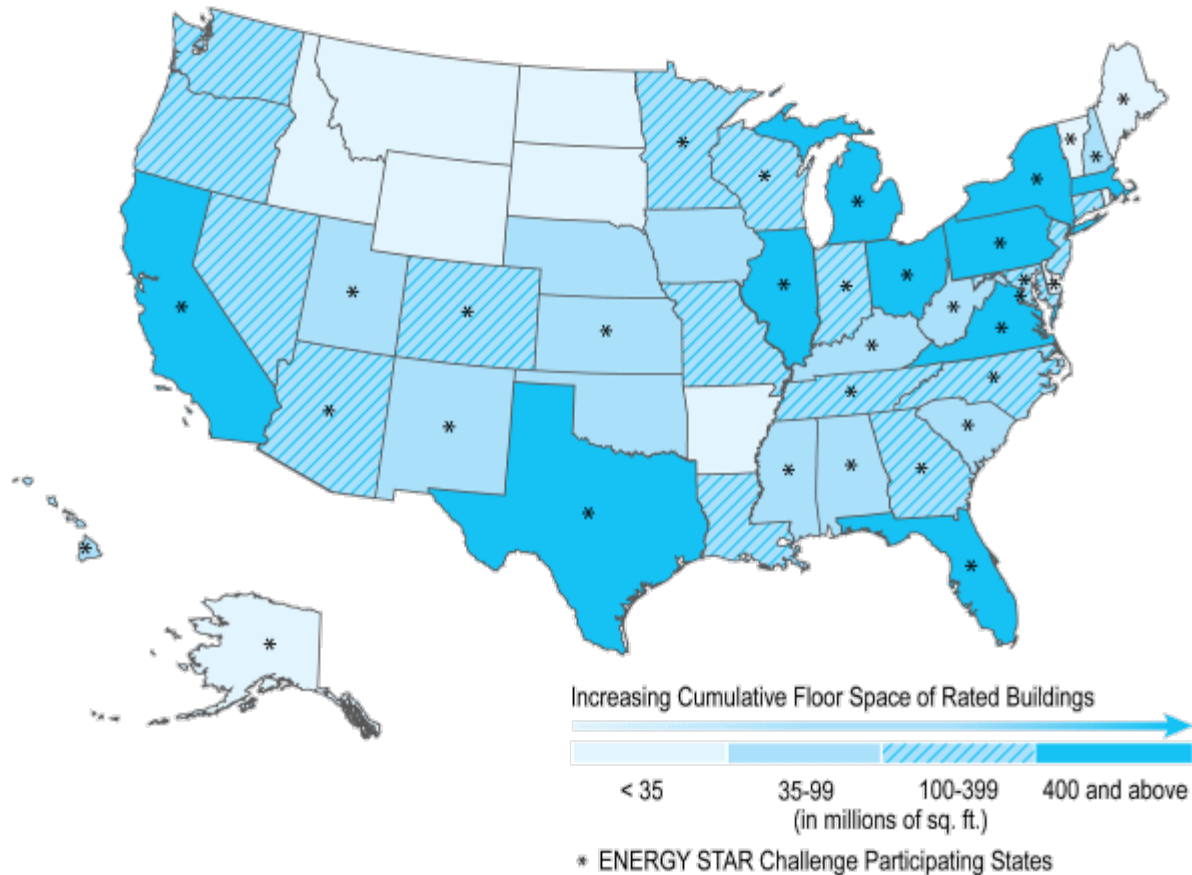
## Cumulative Floor Space Rated by Building Type 2006 - 2008



# EPA Rating in the Market



## Cumulative Floor Space Rated by State



# How Benchmarking Provides Value



Energy benchmarking is a common element among energy management, energy performance disclosure, and building labeling

Utilities can advance their interests by helping customers satisfy these needs

# Benchmarking:

## Drivers of Need / Opportunity

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- Pressure on utilities to meet efficiency goals
  - PG&E
- Energy management partnerships
  - BOMA BEEP
- Campaigns and incentive programs
  - Kilowatt “Crackdowns”
- Market-based disclosure of energy performance
  - CoStar
- Policies on disclosure and labeling
  - Local, State, Federal

# CoStar Online Database



**GREEN SHEET**

## CoStar Goes Green Online and On the Ground

CoStar Group, the number one information services provider to commercial real estate professionals in the United States as well as the United Kingdom and France, is the first commercial real estate information company to add the EPA's ENERGY STAR rating – one of the most recognized national metrics for evaluating building energy efficiency – to U.S. properties in its online database.

In 2006, CoStar also began designating properties that are certified through the Leadership in Energy and Environmental Design, or LEED, program of the U.S. Green Building Council.

**CoStar's online rating initiatives help:**

- Make it easy for its customers to identify high-performance green buildings quickly and easily
- Heighten awareness about the connection between commercial building asset values and energy efficiency within the commercial real estate industry
- Greatly increase transparency on energy performance and climate risk within the building sector by giving CoStar customers direct access to the nation's leading systems for evaluating the environmental efficiency of commercial properties

**CoStar's field initiatives help:**

- Advance sustainable, environmentally sound practices throughout its research operations, the largest in the industry, with approximately 1,000 highly trained office-based research associates and field researchers plus a fleet of 325 high-tech, custom-bred mobile units, of which 303 are low-emission, fuel-efficient Prius hybrid cars. That means less pollution in every community across the United States and United Kingdom where the company's field researchers drive to collect, photograph and verify building information.
- Greatly reduce the need for commercial real estate professionals to conduct this research themselves, thereby eliminating even more CO<sub>2</sub> emissions from the environment.

CoStar's Online Service Now Makes It Easier To:

Query and find green buildings.

Identify green buildings on a results page.

View the green designation on the building's detail page.

www.usgbc.org      www.energystar.gov

**CoSTAR GROUP** For more information, contact –  
 www.costar.com    Phone: 301.215.8300    Email: info@costar.com

CoStar Property® - Search Results - Microsoft Internet Explorer

Address: http://www.costar.com/Property/Results/PropertyResults.aspx

search results  
157 properties / 256 spaces

change criteria	properties	photos	details	neighborhood	map	price	sq ft	status	year built	certification	green sheet
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	292,000	56,584	Existing	20-25	Central Business...	Green Sheet
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	625,625	381,295	Existing	27-34	Central Business...	Green Sheet
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	169,220	165,180	Existing	25-34	Central Business...	Green Sheet
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	675,400	69,562	Existing	25-28	Central Business...	Green Sheet
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	167,307	36,701	Existing	24-30	Central Business...	Green Sheet
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	469,733	110,540	Existing	30-50	Central Business...	Green Sheet
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100,658	89,518	Existing	25-31	Central Business...	Green Sheet
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CoStar Group Promotes Energy Efficient, Sustainable Green Buildings by Adding EPA's ENERGY STAR Rating to Commercial Properties in its Database

February 12, 2007



# Leasing Advertisement

## ENERGY STAR Qualified Building (Irvine, CA)



2040 MAIN STREET ■ IRVINE, CALIFORNIA

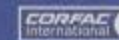


### FEATURES:

- Class "A" Office Building
- Immediate Occupancy
- Located in the Irvine Concourse
- Amenities Include: The Sports Club Irvine, Embassy Suites and Crown Plaza Hotel, McCormick & Schmick's, El Torito Grill, Taco Bell Cafeteria, Italian & Thai Food Along with Three (3) Dell's



**Voit**  
Commercial Brokerage



For Additional Information, Please Contact:

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Irvine, CA 92614



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# Orbitz and ENERGY STAR



Eco-Tourism Travel and Eco-Tourism Vacation on Orbitz...

## 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: Maryland [Eco-Friendly Hotels Criteria](#)


[Springhill Suites Baltimore BWI- Baltimore, MD](#) ●● [Courtyard by Marriott Silver Spring North- Silver Spring, MD](#) ●●

[Residence Inn Baltimore BWI Airport- Baltimore, MD](#) ●● [Country Inn & Suites by Carlson, BWI- Linthicum, MD](#) ●●

[Residence Inn by Marriott Silver Spring- Silver Spring, MD](#) ●●

**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](http://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 <https://www.energystar.gov/istar/pmpam/>.

- On April 15, 2008, Orbitz became the first online travel agency to recognize ENERGY STAR qualified hotels
- ENERGY STAR is included as 1 of 5 "Eco-Friendly" hotel criteria
- More than 1/3 of U.S. business travelers seek out hotels that are environmentally friendly
  - April 2008 Survey by Deloitte ("The Staying Power of Sustainability")

# Community Initiatives



- Twelve states and municipalities with campaign and incentive programs
- Ten with adopted or proposed policies

POLICIES LEVERAGING ENERGY STAR TOOLS		
State/Municipality	Policy	Summary
Borough of West Chester, PA	<a href="#">Borough Ordinance</a>	This Ordinance requires new commercial construction to be <b>Designed to Earn the ENERGY STAR</b> and benchmarked annually in EPA's <b>Portfolio Manager</b> .
City of Denver, CO	<a href="#">Executive Order 123</a>	Executive Order 123 requires new construction and major renovations of existing and future city-owned and operated buildings to be <b>Designed to Earn the ENERGY STAR</b> and benchmarked in EPA's <b>Portfolio Manager</b> .
District of Columbia	<a href="#">Green Building Act of 2006</a>	The Green Design system annual
District of Columbia	<a href="#">Clean and Affordable Energy Act of 2008</a>	The Climate Eligible Management a public
State of CA	<a href="#">AB 1103, 2007</a>	Assembly maintains nonresidential or open prosp
State of MI	<a href="#">EO 2005-4, 2005</a>	Executive establish Depart govern bench
State of OH	<a href="#">EO 2007-02</a>	Executive Manag baselin

CAMPAIGNS AND INCENTIVE PROGRAMS LEVERAGING ENERGY STAR TOOLS		
State/Municipality	Policy	Summary
City of Albuquerque, NM	<a href="#">Green Path Program</a>	This program encourages and facilitates the voluntary design and construction of energy-efficient buildings that meet measurable criteria, which includes earning <b>Designed to Earn the ENERGY STAR</b> through EPA's <b>Target Finder</b> .
City of Chicago, IL	<a href="#">Chicago Green Office Challenge</a>	Participants in the Chicago Green Office Challenge will use EPA's <b>Portfolio Manager</b> to track energy and water use and compile results at the end of the contest period.
City of Louisville, KY	<a href="#">Louisville Kilowatt Crackdown</a>	Participants in the Louisville Kilowatt Crackdown will track their building's energy performance using EPA's <b>Portfolio Manager</b> and work to improve performance during the campaign period. The competition is open to owners and managers of all commercial buildings in the city.
City of Portland, OR	<a href="#">BOMA Energy Showdown</a>	Participants in the BOMA Portland Office Energy Showdown will track their building's energy performance using EPA's <b>Portfolio Manager</b> and work to improve performance during the campaign period. The competition is open to owners and managers of commercial offices.
City of San Francisco, CA	<a href="#">Earth Hour 24x7 Energy Challenge</a>	Participants in the San Francisco Earth Hour 24x7 Energy Challenge will track their building's energy performance using EPA's <b>Portfolio Manager</b> and work to improve performance during the campaign period. The competition is open to owners and managers of office buildings, hotels, retail stores, hospitals, medical office buildings, supermarkets, and schools.
City of Seattle and King County, WA	<a href="#">BOMA Kilowatt Crackdown</a>	Participants in the BOMA Seattle/King County Kilowatt Crackdown will track their building's energy performance using EPA's <b>Portfolio Manager</b> and work to improve performance during the campaign period. The competition is open to owners and managers of commercial offices.
State of NM	<a href="#">HB 534: Sustainable Building Tax Credits</a>	To qualify for income tax credits, applicants must demonstrate that the commercial building is 50 percent more efficient than an average building of the same type using EPA's <b>Target Finder</b> .
State of NJ	<a href="#">NJ Pay for Performance Program</a>	Under the Pay for Performance program, commercial building owners are given technical assistance with developing and implementing an Energy Reduction Plan to reduce energy use by 15 percent or more. Participants benchmark energy use in EPA's <b>Portfolio Manager</b> to verify the required 15 percent threshold savings.

Interactive fact sheet at [www.energystar.gov/government](http://www.energystar.gov/government)



# Requirements for Utilities



## **California – ENERGY STAR Disclosure During Real Estate Transactions** **Assembly Bill (AB) 1103 (Oct., 2007)**

By January 1, 2009, upon the request of any commercial building owner, requires all utilities to make available data for uploading into Portfolio Manager.

By January 1, 2010, requires the disclosure of an ENERGY STAR rating and energy use data as part of commercial real estate transactions involving the sale, lease, or financing of a whole building.

## **Washington – An Act to Reduce Climate Pollution in the Built Environment** **Senate Bill 5854 (Governor signature expected May, 2009)**

On and after January 1, 2010 qualifying utilities shall maintain records of energy consumption data of all nonresidential buildings in format compatible for uploading to US EPA Portfolio Manager.

On and after January 1, 2010 utilities shall upload the energy consumption data to Portfolio Manager upon request by building owner.

By January 1, 2011 phased-in disclosure of data and ratings at time of sale, lease or financing.





## Leverage benchmarking to:

- Acquire efficiency customers
- Build customer relationships
- Motivate repeat customers



# Acquiring Efficiency Customers

# Partner with Associations:

## BOMA International Uses Benchmarking

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- BOMA Energy Efficiency Program (BEEP)
  - Operational excellence program promoting no- and low-cost strategies for optimizing equipment, people and practices.
  - More than 14,000 commercial real estate professionals have participated in BEEP seminars
- Market Transformation Energy Plan & 7-Point Challenge
  - Aims to reduce energy consumption in commercial buildings by 30 percent by 2012 based on an ENERGY STAR average building rating of 50
  - Over 100 BOMA members have endorsed the 7-Point Challenge.

# Participation in Local Contests: LG&E and Louisville Kilowatt Crackdown

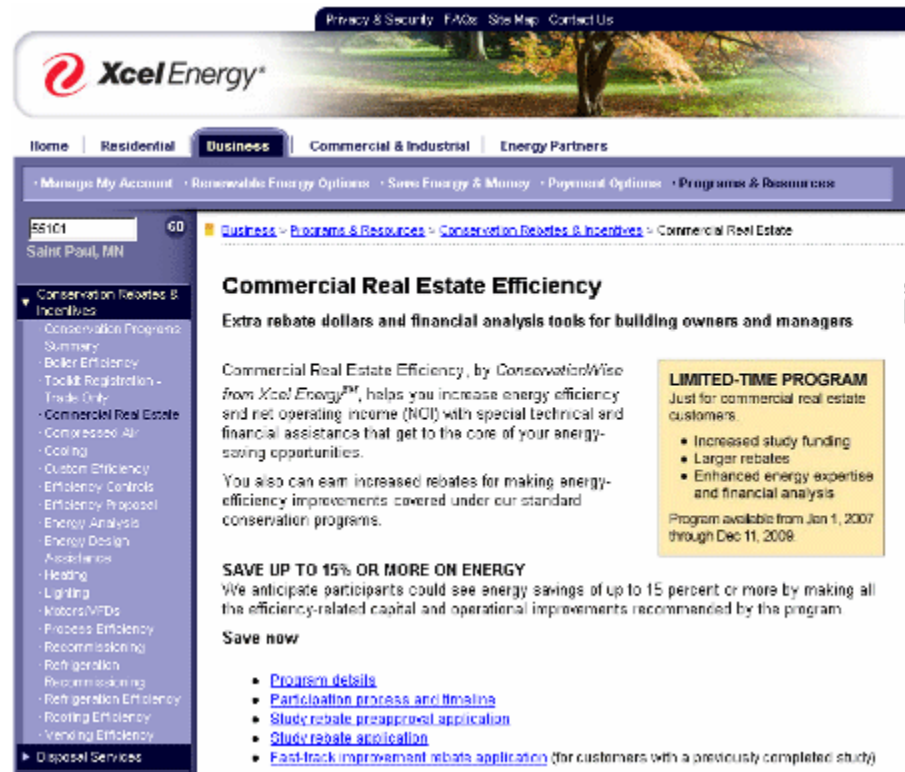


- “Louisville Energy Alliance” formed in response to Mayor Abramson’s launch of the ENERGY STAR Challenge to the community
- The first joint EE campaign led by major commercial real estate organizations in Louisville
  - BOMA (Building Owners and Managers Assoc.)
  - CCIM (Certified Commercial Investment Member)
  - ICSC (International Council of Shopping Centers)
  - IFMA (International Facility Management Assoc.)
  - IREM (Institute for Real Estate Management)
- Louisville Gas & Electric will provide all Crackdown participants with electronic energy data in the format needed to benchmark in Portfolio Manager.



# Benchmarking as Program Gateway: Xcel Energy CREE Program

- Program design:
  - Diagnosis
    - 1) Benchmarking and opportunity summary
    - 2) Investment-grade audit
  - Implementation
    - Retrocommissioning and capital improvements
- 30% bonus incentive for implementation of all measures w/ payback  $\leq$  3 yrs



The screenshot shows the Xcel Energy website interface. At the top, there is a navigation bar with links for Privacy & Security, FAQs, Site Map, and Contact Us. Below this is the Xcel Energy logo and a navigation menu with options: Home, Residential, Business (selected), Commercial & Industrial, and Energy Partners. A secondary navigation bar includes links for Manage My Account, Renewables Energy Options, Save Energy & Money, Payment Options, and Programs & Resources. The main content area is titled "Commercial Real Estate Efficiency" and features a sidebar menu on the left with categories like Conservation Rebates & Incentives, Commercial Real Estate, and Disposal Services. The main text describes the program as offering extra rebate dollars and financial analysis tools for building owners and managers. A yellow callout box highlights a "LIMITED-TIME PROGRAM" for commercial real estate customers, offering increased study funding, larger rebates, and enhanced energy expertise. A "SAVE UP TO 15% OR MORE ON ENERGY" section mentions that participants could see energy savings of up to 15 percent or more by making all the efficiency-related capital and operational improvements recommended by the program. A "Save now" section lists several links: Program details, Participation process and timeline, Study rebate preapproval application, Study rebate application, and Fast-track improvement rebate application (for customers with a previously completed study).

**Results to Date:** 100 buildings recruited in MN; nearly 40 M sq ft studied; 800 measures identified with potential savings of 40 GWh

# Broader Portal to Programs: PG&E “More than a Million” Initiative



- Promotional effort designed to reach building owners and property management firms with fleets of buildings capable of implementing 1 MW of demand savings
- Streamlined services for large customers willing to “bundle” projects” across buildings and follow through on a stream of projects
- Benchmarking with Portfolio Manager is the first step:
  - Facilitates prioritization of target buildings
  - Provides ongoing management “snapshot ”



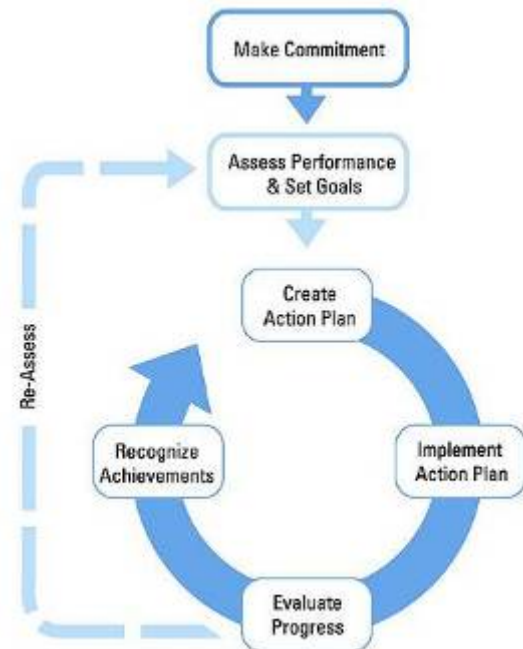
# Building Customer Relationships

# Building Customer Relationships: Create an Action Plan with Customers

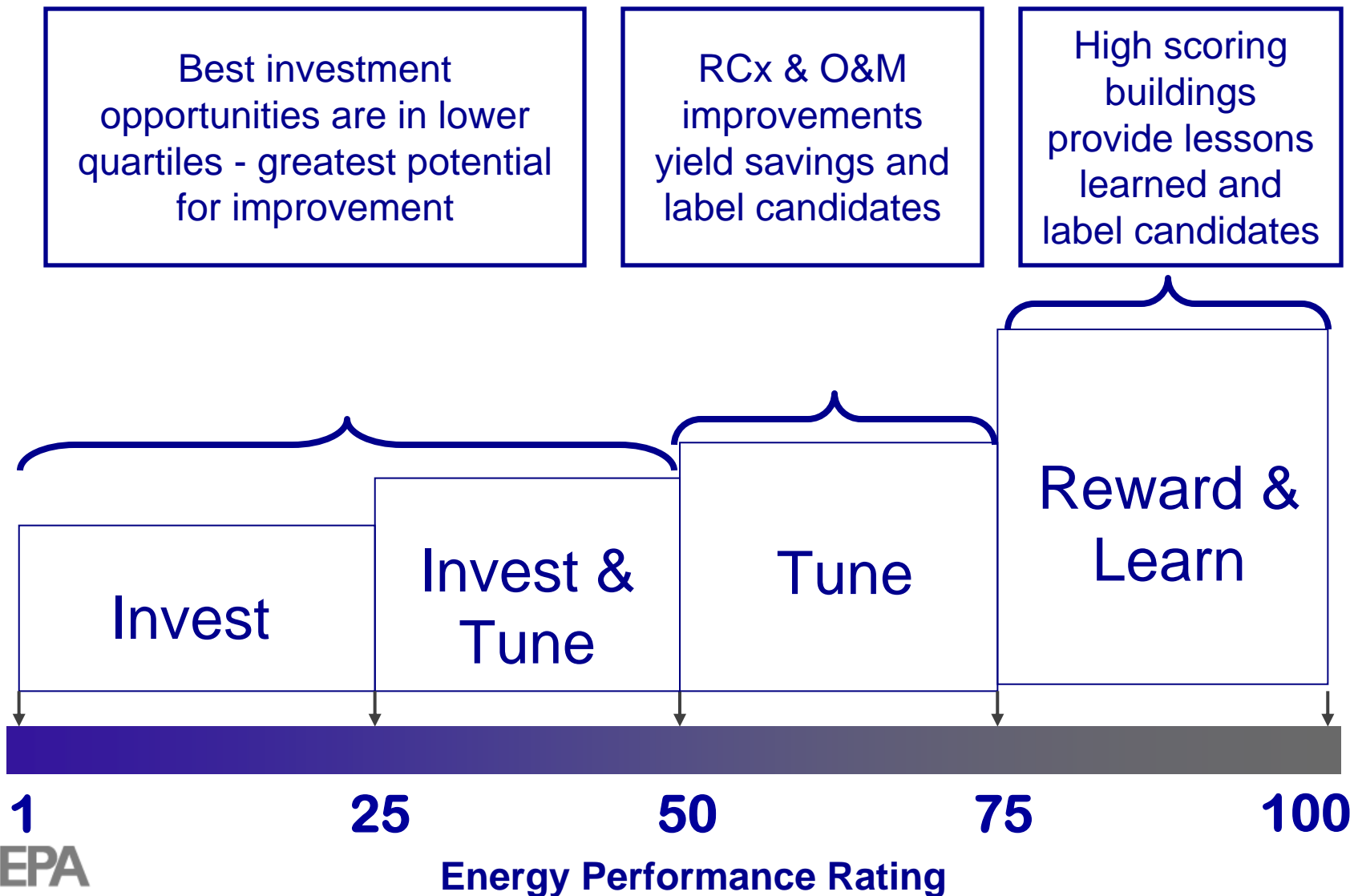


- Developing an Action Plan with customers within a broader energy management framework helps deepen relationships:
  - Involving customer decision makers in planning energy efficiency investments
  - Helping customers and utilities set priorities to target investments
  - Creating repeat efficiency customers
- Benchmarking is a key first level diagnostic to inform an Action Plan

## ENERGY STAR® GUIDELINES FOR ENERGY MANAGEMENT



# Building Customer Relationships: Using Benchmarking to Guide Priorities



# Support On-going Improvement: PG&E Offers Automated Benchmarking



For My Home | **For My Business** | Login | About PG&E | Contact Us | Español | 中文 |  **GO**

**PG&E**

MANAGE MY ACCOUNT | CUSTOMER SERVICE | **ENERGY SAVINGS & REBATES** | ENVIRONMENT | EDUCATION & SAFETY

Energy Analyzers & Audits

- Do-It-Yourself Online
  - Analyzer en español
  - By Mail
  - By Phone
  - CD-ROM
  - On-Site Energy Audit
  - Integrated Energy Audit
  - Targeted Energy Audit
- Automated Benchmarking Service**
- Rebates & Incentives
- Economic Development
- Incentives By Industry
- Solar Energy
- Energy Saving Tips
- Buyer's Guides
- Demand Response Programs
- Self Generation Incentives
- Other Resources

## Automated Benchmarking Service

Print Page | Email Page

PG&E's Automated Benchmarking Service (ABS) provides the ENERGY STAR® Portfolio Manager with your monthly energy usage data.

The ENERGY STAR® Portfolio Manager is the Environmental Protection Agency's interactive energy management tool that allows you to track and assess energy and water consumption of your buildings. It assigns large commercial buildings an energy performance score and intensity metric (Btu/sq. ft.) based on your previous 12 months of energy use.


### Benefits

The performance score and other results help building owners like you:

- Target buildings for improvement
- Partner with your utility to develop energy-efficiency projects
- Track improvements on an ongoing basis

### How to Get Started


- Register and create an account for each building you want to benchmark at the [ENERGY STAR® Portfolio Manager](#).
- In the Portfolio Manager's Meter Name field(s), enter your building's PG&E Service ID number(s), which can be found on your PG&E bill, beginning on Page 3.
- Within Portfolio Manager, from the Energy Services Provider drop down list, select the option to share building data with PG&E. This will initiate the Automated Benchmarking Service request to PG&E.
- Complete, print, sign and FAX the [Data Release Authorization](#) to PG&E's ABS team



#### Carbon Calculator

What's your carbon footprint?


[Learn more](#)



#### Know What's Below

Call 811 before you dig.

[Learn more](#)



#### Incentives for Installing Solar Equipment

[Find them here](#)

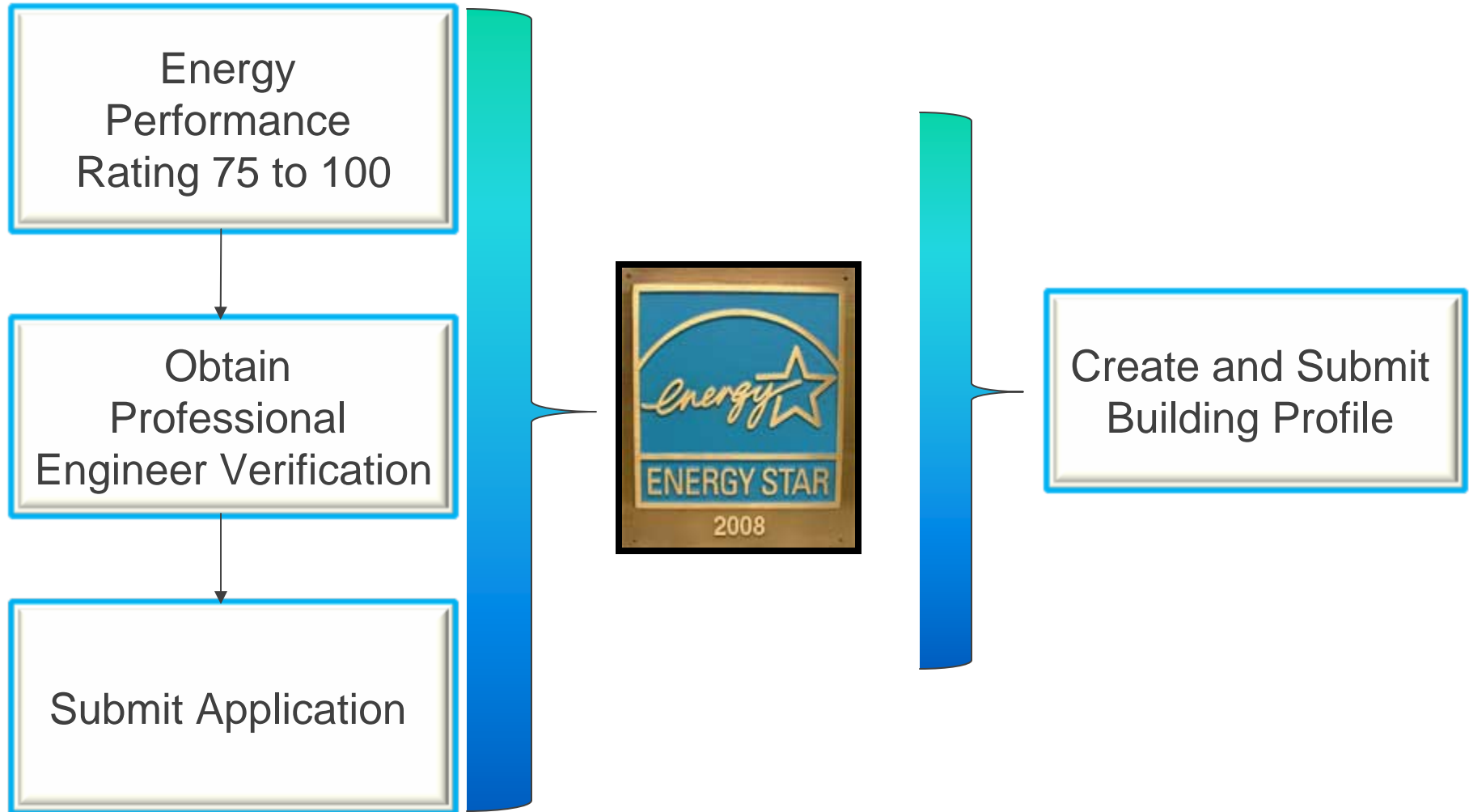


# Motivating Repeat Customers

# Recognition to Motivate



# Apply for the ENERGY STAR



# Xcel Energy Ad Print Campaign



Launched in May 2008 to raise awareness of building assessment services available to Minnesota customers through its Energy Analysis Program.

Ads appear in eleven trade publications.

**YOUR ENERGY STAR®  
OUR EXPERTISE.**

Does your building qualify for an ENERGY STAR® rating? We can help you find out with a **FREE ENERGY STAR® Building Assessment**. Buildings labeled with the ENERGY STAR®, use about 40 percent less energy without compromising comfort or services. They also protect the environment by reducing greenhouse gas emissions and conserving natural resources. To earn the ENERGY STAR® rating your building must score in the top 25% on energy usage in your business category. Join over 3,200 top performing buildings by earning your ENERGY STAR rating! Contact your Xcel Energy Account Manager or our Business Solutions Center at 1-800-481-4700 or [BSC@XcelEnergy.com](mailto:BSC@XcelEnergy.com).



Your Life. Our Energy.

[xcelenergy.com](http://xcelenergy.com)



## Next Steps

# Building Performance Program

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- Target Marketing / Recruiting
- Benchmarking
- Strategic Energy Management / Action Plan Development
- Whole Building Performance Assessment
- Incentives for Whole-Building Upgrades
- Performance Monitoring and Verification