



# VIP ENERGY STAR Portfolio Manager Training

March 21, 2012



### **Agenda**

- Update on Energy Benchmarking for Private Buildings in the District of Columbia
  - Presenter: Marshall Duer-Balkind, DDOE
- Fundamentals of Portfolio Manager
   Training for DC Building Owners and Managers
  - Instructor: Kudret Utebay, The Cadmus Group, Inc. on behalf of EPA's ENERGY STAR Program





# Energy Benchmarking of Private Buildings in the District of Columbia

#### **Marshall Duer-Balkind**

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### Why Benchmark?



### For Building Owners and Managers

- Rate and compare performance
- Manage building energy and water consumption
- Verify and track progress of improvement projects
- Calculate your carbon footprint
- Set investment priorities
- Attract Tenants
- Save money
- Option to gain ENERGY STAR certification

#### For the District

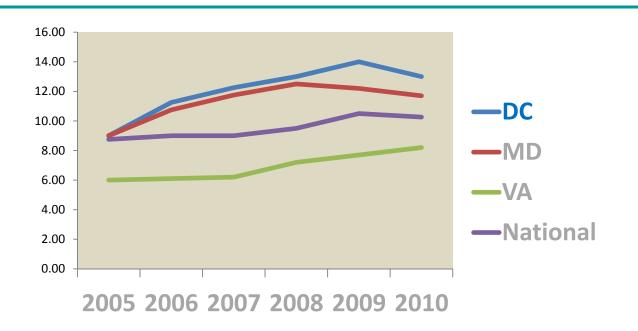
- 75% of the DC's greenhouse gas emissions come from buildings
- Rating and Disclosure will shift the market towards greater energy efficiency
- National Leadership—1<sup>st</sup> such law in the country

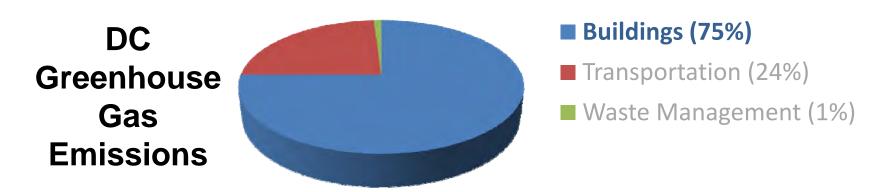


# The Need for Building Efficiency





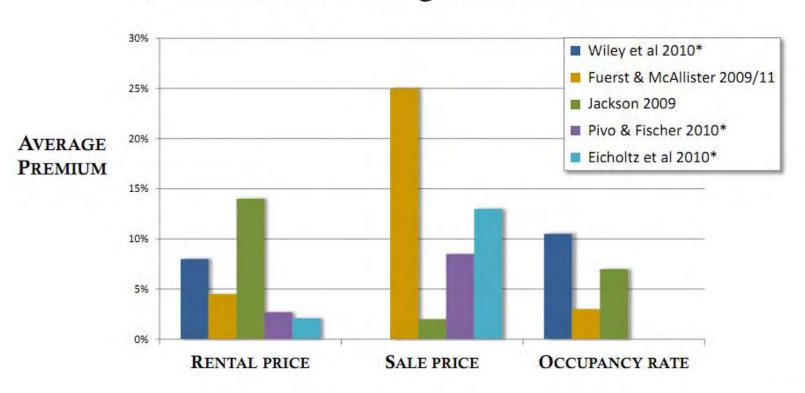




# **Energy Efficiency & Property Value**



# Added Value of ENERGY STAR-Labeled Commercial Buildings in the U.S. Market



© Institute for Market Transformation, 2011.

All studies controlled for multiple factors, including building size and location.

For more information, please contact David Leipziger at david@imt.org.





<sup>\*</sup>These studies only tracked two of the listed indicators.

#### Requirements



District laws — Green Building Act of 2006 (GBA) & Clean and Affordable Energy Act of 2008 (CAEA):

- Public Building ENERGY STAR benchmarking (>10,000 sq. ft.) and public reporting of scores. Began in 2009. Data available online; 2011 updates to be released this spring
- Private Building ENERGY STAR benchmarking (>50,000 sq. ft.), phased in by building size, with public reporting of scores beginning with second year of data.

### **District Phase-In by Size**



#### Phased Implementation for ENERGY STAR Reporting

Building Size	Utility Year Data	First Report*	% of Covered Buildings	% of Total Building Area
200,000+ sq. ft.	2010	July 1, 2011**	36%	66%
150,000+ sq. ft.	2011	April 1, 2012**	47%	76%
100,000+ sq. ft.	2012	April 1, 2013	62%	86%
50,000+ sq. ft.	2013	April 1, 2014	100%	100%

<sup>\*</sup> And annually thereafter

<sup>\*\*</sup> Deadlines for 2010 and 2011 data are still in flux based on the ongoing rulemaking process (anticipated Summer 2012; will be the same deadline for both 2010 and 2011 data)

#### **Current Timeline**



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s >200k	
2012 reports due for buildings >100k	
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#### **Progress in Other Cities**



- NYC, Seattle, San Francisco, & Austin all have similar benchmarking programs
- NYC, Seattle, & San Francisco collected first data in 2011
  - NYC law covers ~16,000 buildings > 50,000 sq. ft.
  - Seattle law covers ~8,000 buildings >10,000 sq. ft.
- 60% of all NYC benchmarking done by consultants
- Access to aggregate building energy data key to success
- US DoE has designed common data platform for all cities
  - SEED Platform (Standard Energy Efficiency Data Platform)
- U-Pennsylvania researchers are analyzing initial NYC data









#### **Data Access**



### **Access to Aggregate Whole-Building Data**

- Critical to success in other cities
  - NYC: owners can get data from ConEd for \$102.50
  - Seattle & Austin: Direct upload to PM by municipal utility
  - ComEd (Chicago): Voluntary direct upload to PM with one click
- In DC: must ask all tenants directly for their utility data
- Limited privacy concerns in large buildings
- Release of building data is supported by <u>Data Access and</u> <u>Transparency Alliance (DATA)</u>
- DDOE working with utilities, PSC, DC Council, & DC SEU to make aggregate utility data service available

### What Is NOT Changing



#### **Basic District Benchmark Process**

- Use <u>ENERGY STAR Portfolio Manager</u> for both benchmarking and data submission
- Applies to both Non-Residential and Residential buildings over 50,000 sq. ft.
- Parking garages don't count towards size thresholds
- No financial data or other confidential business information will be collected
- Failure to meet deadlines or submission of fraudulent data subject to fines of up to \$100/day



#### **How Will It Work?**



#### **Basic District Benchmark Process**

- Open ENERGY STAR Portfolio Manager Account
- Enter energy, water, and space use attribute info:
  - Use whole building data if available
  - Refer to <u>District Data Collection Worksheet</u>
  - Request and enter tenant data if needed
- Generate performance results including:
  - Total energy and water use
  - Energy Use Intensity
  - Benchmark Score if available
- Import new <u>District Reporting Template</u>
- Transfer report to DDOE for tracking and public release

### **Reporting to DDOE**



- Go to DDOE website and download new <u>District Reporting Template</u> each year
- Import into Portfolio Manager
- Generate custom report
- Authorize release of report to District's master account
- EPA will send confirmation of submission

#### **Publication of Results**



- Benchmark results will be made public in 2<sup>nd</sup> reporting yr
- Results will be reported on the DDOE website (<u>www.ddoe.dc.gov</u>)
- Whole vs. Partial building data will be distinguished
- Data stored in secure US DoE database



Address	Year Built	
Energy Performance Rating (1-100)	Energy Intensity	
Electricity Use	Natural Gas Use	
Water Use	CO <sub>2</sub> Emissions	
Space Type	Gross Building Area	



#### 1. Official Warning Period:

- Building owners or non-residential tenants who do not comply will get notice by mail
- 30-day warning period to collect & submit data
- No fines imposed until after end of warning period
- After warning period, fines accrue at rate of up to \$100/day





#### 2. Increased Flexibility

- Previously, owners would have been required to collect data from tenants using certain DDOEprovided forms
- Forms are intended as a convenience, so owners will be able to collect needed data with or without forms, and from tenants or third parties (in the future, will ideally get data directly from utility companies)
- Tenants moving out given more time to get final utility data to landlords



#### 3. Multiple Buildings on a Tax Lot

- DC tax records do not list individual building size
- Following Energy Star practices, if buildings share utilities or systems <u>without separate or sub-metering</u>, benchmarking buildings independently not possible
- Size threshold will apply to combined gross floor area of all spaces that share master meters
- Must be benchmarked and submitted to DDOE as a single building or campus (depending on space type)



#### 4. Multi-family Buildings

- Multifamily owners/managers not required to request data from any <u>residential</u> tenants; benchmark using master meters, common area meters, and data from non-residential tenants
- Must use aggregate utility data once it is available



# ENERGY STAR Target Finder \*\*\* sustainable cc for New Buildings



 CAEA also requires projects that submit 1<sup>st</sup> building permit after January 1, 2012 to model their energy performance using the **ENERGY STAR Target Finder** Tool and report results to District for publication

Submit your Target Finder "Statement of Energy Design

Intent" to DCRA with your building permit application either as PDF or hard copy

• In 2013, electronic submission will be possible through same process as benchmarking program





### **DC Sustainable Energy Utility**



- Created by Clean and Affordable Energy Act
- Ratepayer-funded; privately-operated
  - Funding: \$7 million in FY11, ramping up to \$20 million by FY14
- DDOE performance contract. Contract Goals:
  - Reduce energy use
  - Reduce peak demand
  - Increase renewable energy capacity
  - Jobs for DC residents
  - Create business for CBE's
  - Spend 30% of funding on low-income

#### **DC SEU Services**



#### DC SEU Provides:

- Free technical assistance
- Make products more accessible
- Make retrofits easier
- Improve access to financing
- Incentives and rebates
- Commercial & Institutional Programs
- Assistance with benchmarking
  - Quality Assurance
  - Benchmarking training
  - Benchmarking assistance (FAQ)

#### **Benchmarking Help Center**



- DC SEU in collaboration with DDOE & IMT
- Technical assistance with ENERGY STAR Portfolio Manager and DC benchmarking requirements
- Modeled on centers in NYC & Seattle
- FREE
- Help Line: <u>202-525-7036</u>
- Future In-Person training sessions



#### **Questions? Comments?**

Contact DDOE at:

info.benchmark@dc.gov

http://ddoe.dc.gov/energybenchmarking

(202) 671-3042

(202) 525-7036

Twitter: <a>@BenchmarkDC</a>





# **EPA's Portfolio Manager Training**

District Department of the Environment & DC Sustainable Energy Utility

Presented by

**Kudret Utebay (The Cadmus Group, Inc.)** 

On behalf of EPA's ENERGY STAR Program



### What is ENERGY STAR?



A government-backed, voluntary program that helps businesses and individuals protect the environment through superior energy performance by providing energy-efficient solutions for homes, businesses, and institutions.

The national symbol for environmental protection through energy efficiency, recognized by more than 80% of all U.S. households.



# Be a Leader – Change Our Environment for the Better





#### U.S. EPA's ENERGY STAR®

The U.S. Environmental Protection Agency (EPA) can help you with buildings and plants to:

- Reduce energy waste
- Reduce GHG emissions
- Protect the environment



## **ENERGY STAR Qualified Products**





















# **Opportunities in Buildings**

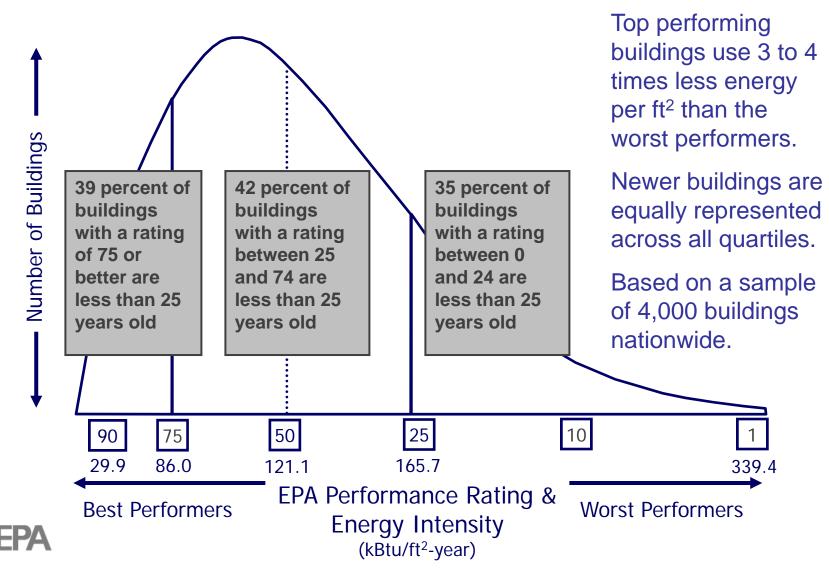


- Commercial buildings and industrial facilities generate about 50 percent of U.S. carbon dioxide emissions.
- ➤ 30 percent of energy consumed in commercial and industrial buildings is wasted.
- Reductions of 10 percent in energy use can be possible with little or no cost.



# **Energy Performance Gap**





## **Technology** ≠ **Performance**



- 60 percent of building fan systems oversized on average by 60 percent (EPA fan study)
- Chillers oversized 50 percent to 200 percent (Lawrence Berkeley National Laboratory)
- Improper installation and poor maintenance

NEXT: So what can Portfolio Manager help us do?



# Benchmarking



- Benchmarking through ENERGY STAR allows you to compare:
  - One building against a national sample of similar buildings
  - Compare your buildings against other MW COG members' buildings
  - All of your buildings of a similar type to each other
  - Your building's current performance against its past and/or baseline performance



# Benchmarking



### **Portfolio Manager**

- ➤ Benchmark the energy use of all of your buildings receive an energy use intensity (EUI). Many buildings are eligible to receive energy performance ratings on a 1-100 scale.
- ➤ Track changes in energy and water use over time in single buildings, groups of buildings, or entire portfolios.
- Track and report cost savings and GHG emissions.
- > Apply for the ENERGY STAR.
- www.energystar.gov/benchmark



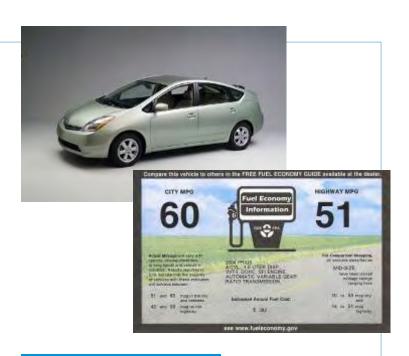
# **Benchmarking for Local and State Governments**





# Rating System for Buildings





Fuel Efficiency

MPG

Is 60 MPG high or low for an automobile?

Is 80 kBtu/SF/YR high or low for a building?

Statement of Energy Performance

**EPA Rating** 







# Space Types Eligible for the 1-100 Performance Rating System



**Schools** 



Retail



**Office Buildings** 



**Hotels** 



**Medical Office Buildings** 



Waste Water
Treatment Plants



**Courthouses** 



**Financial Centers** 



Warehouses



**Residence Halls** 



**Supermarkets** 



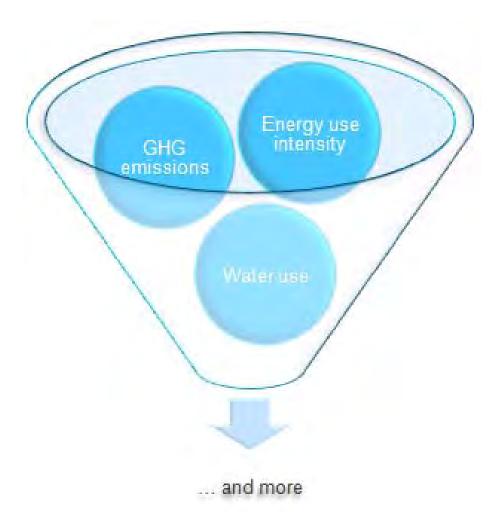
Hospitals



## **Examples of Non-Ratable Space Types**



- Police Stations
- Fire Stations
- Convention Centers
- Laboratories
- Libraries
- Malls
- Movie Theatres
- Restaurants
- Stadiums and Arenas

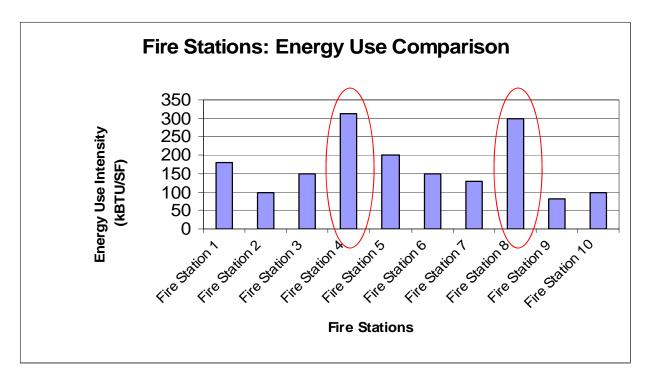




# **Identify Best Opportunities and Set Improvement Goals**



- Identify under-performing buildings to target for energy efficiency improvements.
- Estabish baselines to set goals and measure progress





## **Track Progress Over Time**



- Set a baseline and monitor energy efficiency improvements over time
- View percent improvement in weather-normalized energy use intensity.
- Track reductions in greenhouse gas emissions.
- Monitor energy and water costs

Ву	building	

Facility Name	Current Source Energy Intensity (kBtu/Sq. Ft.)	Change from Baseline: Adjusted Energy Use (%)	Change from Baseline: Energy Use Intensity (kBtu/Sq. Ft.)	Change from Baseline: GHG Emissions (MtCO <sub>2</sub> e)
Fire Station 1	160.1	-12.3	-6.1	-275.86
Fire Station 2	172.6	-18.3	-10.7	-488,62

Download in Excel

Portfolio-wide

Portfolio Averages					
Baseline Rating: 40 Facilities Included: 310	Current Rating: 44 Facilities Included: 311				
Change from Baseline: Portfolio Adjusted Percent Energy Use (%): 10.1% Facilities Included: 378					
Averages are weighted by Total Floor Space. <u>More about Baselines</u> <u>More about Change from Baseline: Adjusted Energy Use</u>					



## **Document Savings Results**



- Provide transparency and accountability to help demonstrate strategic use of capital improvement funding.
- Quickly and accurately demonstrate savings for an individual building or entire portfolio:
  - Energy use
  - GHG emissions
  - Water use
  - Energy costs
- Download performance metrics from Portfolio Manager into Excel.
- Generate a Statement of Energy Performance (SEP) for each building, summarizing important performance indicators, including energy intensity and GHG emissions.
- Generate an Energy Performance Report showing reductions in key indicators over a user-specified time period.

Visit <u>www.energystar.gov/benchmark</u> to get started



# Required Information for Benchmarking in Portfolio Manager



#### Building Identifiers

Name, street address, zip code for weather normalization

#### Space Type Data (depends on space type)

- Other Space Types: Total Floor Area
- Office: Square footage, hours of operation, Number of workers on main shift, # of PC's, Percent of gross floor area that is air conditioned, heated

#### Energy Use

 Bldg specific invoice information from all purchased energy. Begin with at least 11 consecutive months for each source and update with monthly usage data.



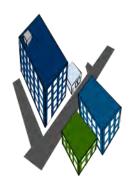
## **Benchmarking Methods**







 Enter building and energy consumption information into Portfolio Manager.



#### Bulk Data Upload

 Upload large sets of building data in Portfolio Manager using an Excel template.



 Use Service and Product Provider to have the rating automatically integrated into your energy information and bill handling system



### **Utility-based Automated Benchmarking**

Option 1: Provide utility data

Option 2: Provide automated benchmarking services

## Portfolio Manager Features

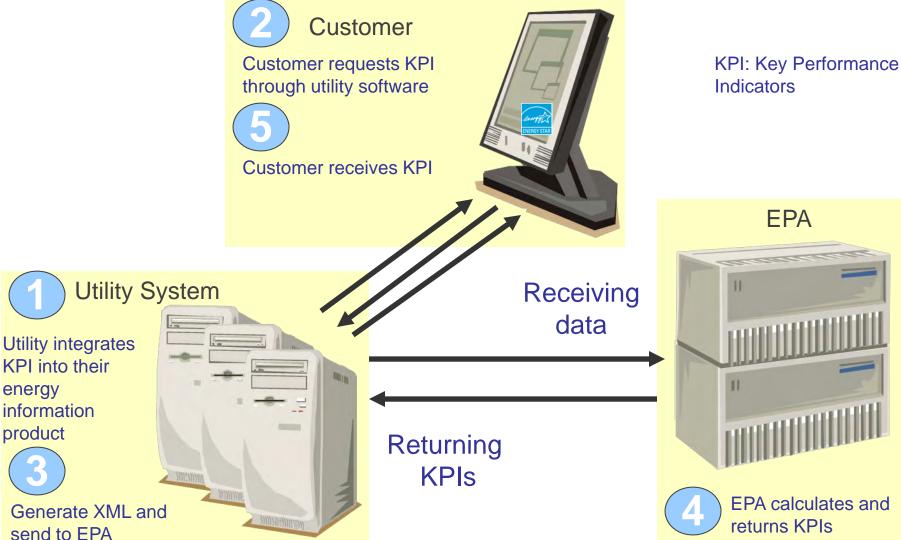


- Greenhouse Gas Emission Tracking
- Import Templates
- Automated benchmarking
- Master account feature
- View (and Reporting) Options
- Statement of Energy Performance
- Percent energy reduction
- Water tracking
- Multi-Facility Meter Update



# How Does a Utility Automate Benchmarking?





## **ABS Steps and Resources**

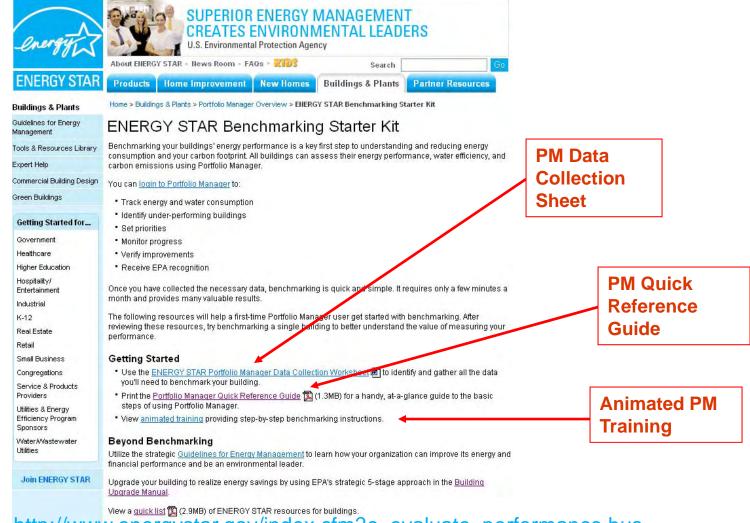


- Overview on ENERGY STAR web site
- Register for <u>ABS account</u>
- Download ABS Overview and Users Guide from ABS account Web site
- Email technical question to buildings@energystar.gov
- Request conference calls with EPA program and technical support teams



## **Benchmarking Starter Kit**



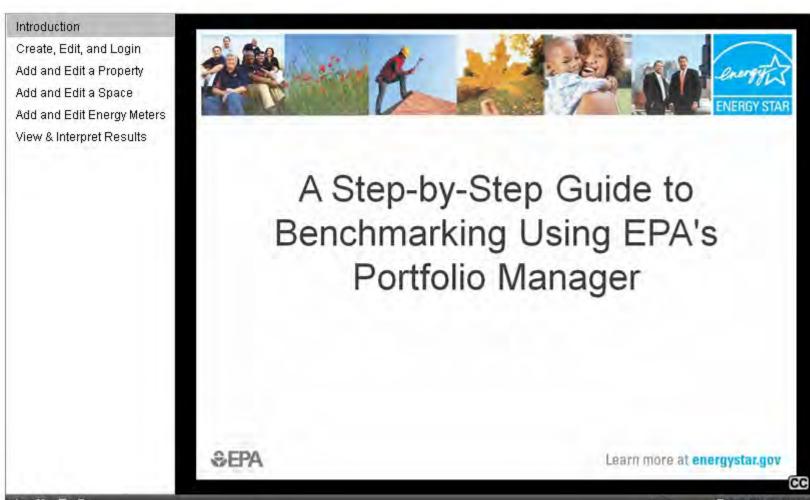




http://www.energystar.gov/index.cfm?c=evaluate\_performance.bus\_portfoliomanager\_benchmarking

# **Animated Training**







## **National and Local Recognition**



> ENERGY STAR Partner



Designed to Earn the ENERGY STAR



The ENERGY STAR for Existing Buildings



- ENERGY STAR Leaders
- > ENERGY STAR Partner of the Year





### **Become a Partner**







1. Go to: the "Buildings & Plants" page

2. Click on (bottom left): "Join ENERGY STAR"



Energy Strategy for the Futu

Discover the steps U.S. busines ore about the recommendation

the Road Ahead (\$1619KB).

Utilities

Join ENERGY STAR



## For More Information



### Visit <u>www.energystar.gov/government</u>

### E-mail buildings@energystar.gov

If you have any questions, please contact

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