



• August 15-18, 2010 • Dallas, Texas •
• Dallas Convention Center •



Energy Awareness & Outreach

Todd Jarvis, CEM

Servidyne

Servidyne Company Profile



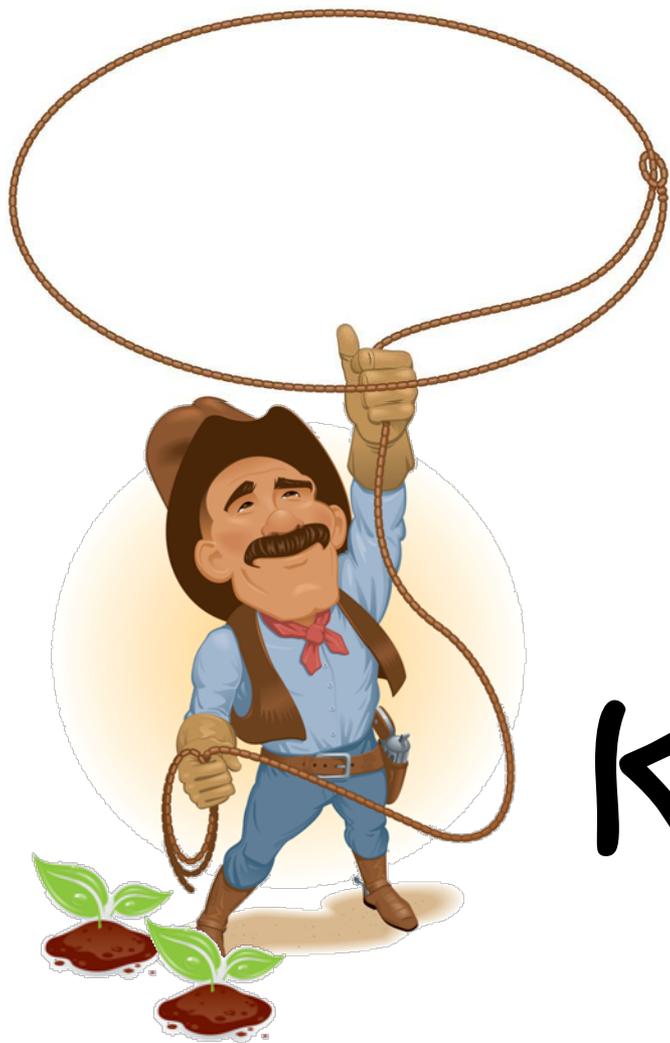
- Founded in 1925 with 30+ years experience in energy efficiency & optimizing building performance
- Eight time United States EPA ENERGY STAR® Partner of the Year
- 86 ENERGY STAR Certifications to-date CY 2010
- 22 active LEED-EB Project
 - 1 Platinum, 7 Gold, 1 Silver, and 1 Certified
- Mission: helping customers maximize value of portfolio through:
 - Lowering energy & operating costs
 - Reduce environmental impact
 - Enhance occupant satisfaction

Did You Know?

- The energy used by commercial & industrial buildings in the U.S. is responsible for nearly **50 percent of our national emissions of greenhouse gases**
- Buildings use **\$200 billion worth of electricity & natural gas each year**
- Over the last 30 years, **energy efficiency has reduced** our country's energy use **by 47 percent**

Your first step in
Do you know what
Rustling up your
developing your
your building's
energy kWh awareness
energy use is?
program,

kWh



Getting Started

- **What** is my total energy use?
- **Where** are the top consuming areas?
 - HVAC systems, lighting, process, plug load
- **When** do I use energy, when do I need it?
 - Operating hours, peak loads
- **How** can I reduce my energy usage?
 - Behavior change, retro-commissioning & continuous-commissioning, energy efficiency, demand response

What, Where & When

Evaluate Your Buildings

- Walk your buildings during occupied & unoccupied periods
- Listen for air & water movement
- Look for lights that are on
- Observe HVAC control set points & actual space conditions
- Realize significant amounts of energy are wasted during “sleeping hours” for your buildings
- Encourage active participation in energy management
- May be lowest hanging fruit of all

How to Choose Your Path

- Behavior Change
- Retro-commissioning
- Continuous-commissioning
- Energy Efficiency
- Demand Response



How to Generate Energy Savings Behavior Changes

- Best approach to reduce energy consumption in most cases is through optimized Operations & Management (O&M)
- Building systems need to be fine-tuned or “**RCx’ed**”
- Many improvements can be made with little or no cost & covered by O&M budgets – savings range from 5-15%
- Costs for this approach can range from \$0.10 to \$0.20/sq. ft. or less; paybacks can be in months & not years
- Process includes training of site staff
- Consider CapEx improvements **after** your energy consumption requirements with your existing systems have been minimized

How to Generate Energy Savings

Retro-commissioning

Why Retro-Commission a building?

- Many have never been commissioned properly or adjusted routinely
- Over time set points & systems have been altered, bypassed, & replaced
- Owner's operating requirements or spaces may have changed
 - Occupancy
 - Addition/subtraction of spaces
 - Different space types
- Design standards have changed



How to Generate Energy Savings

Retro-commissioning

1. Schedule HVAC Systems
2. Adjust Outside Air to Current Needs
3. Mitigate Simultaneous Heating & Cooling
4. Reduce Flow from Oversized Pumps
5. Reset Supply Air Temperatures
6. Enable Economizer Controls
7. Reset Static Pressures/Optimize VFD Operation
8. Stage Boilers/Chillers Properly
9. Lower Condenser Water Setpoints
10. Correct Lighting Control Operation

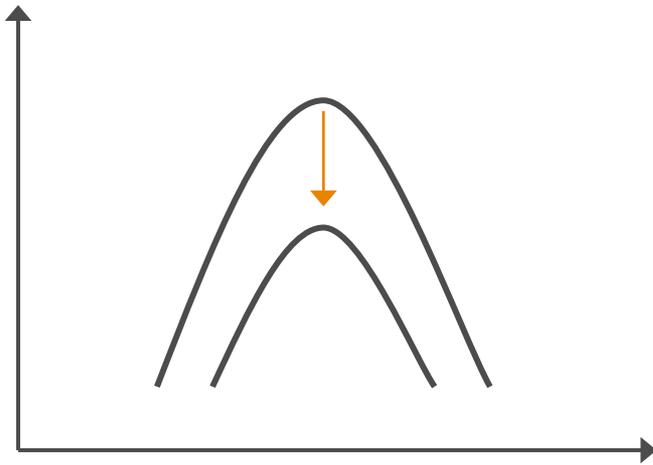
How to Continue Energy Savings

Continuous Commissioning

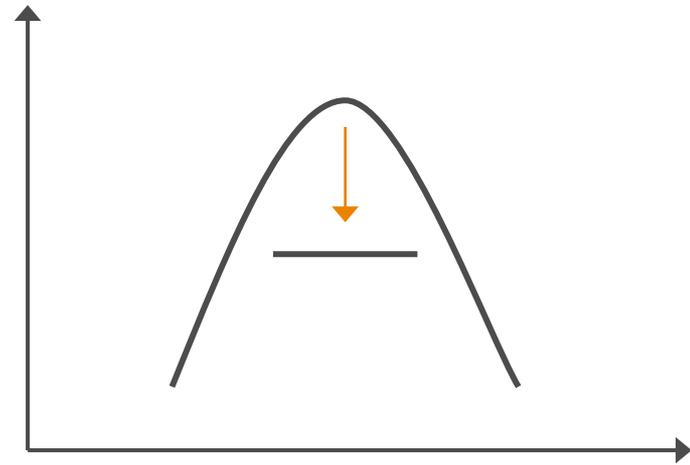
- Install inexpensive but reliable sensor & system monitoring technology
- Integrate with existing building systems & ‘smart grid’ metering technologies – utility consumption, building & system conditions
- Customize a robust information dashboard to capture data to provide ongoing monitoring, alarming, & energy consumption trending
- Identify system faults & maintenance issues prior to equipment failure
- This “Continuous Commissioning” process will ensure the savings realized through Retro-Commissioning will continue into the future

How to Generate Energy Savings

Energy Efficiency & Demand Response



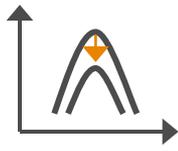
Energy Efficiency



Demand Response

How to Generate Energy Savings

Energy Efficiency

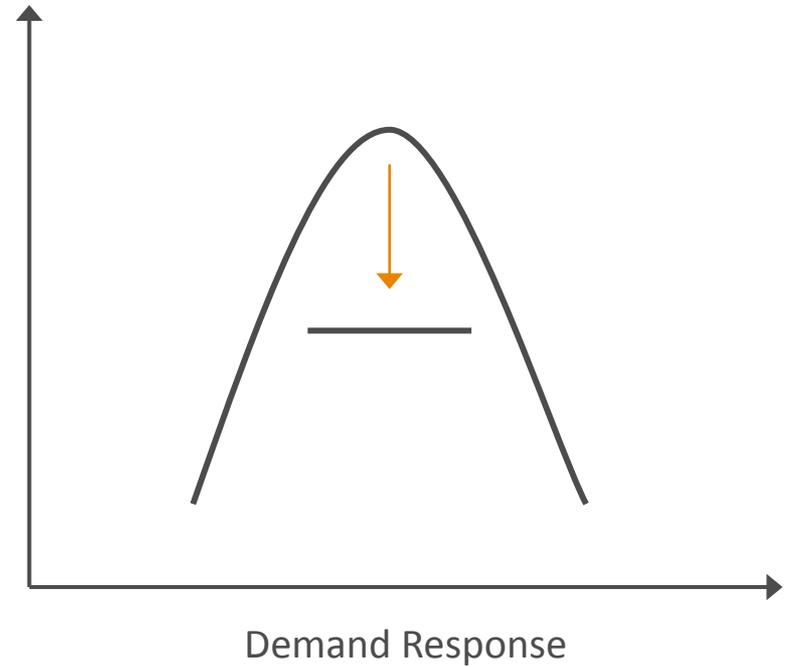
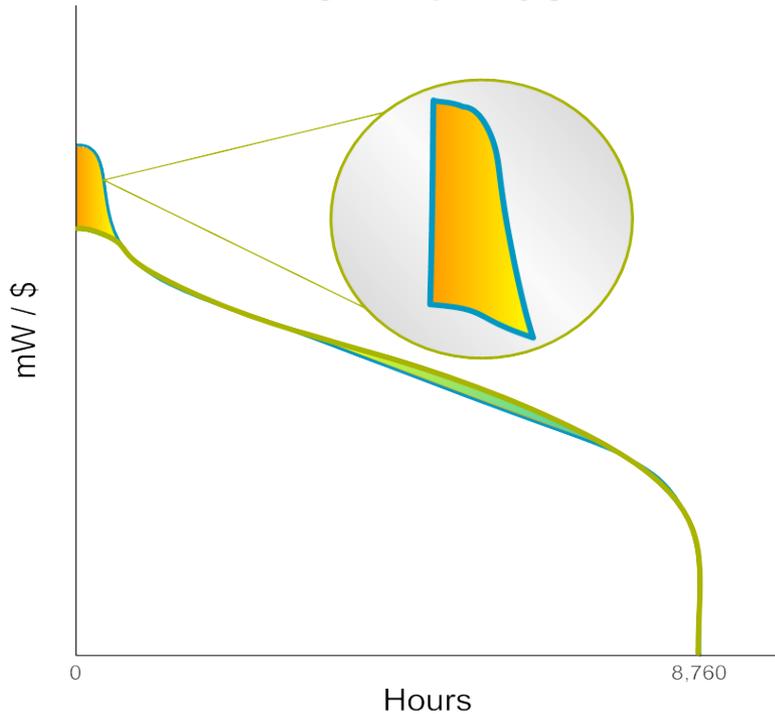


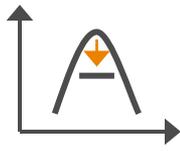
- Lighting, day lighting & lighting control
- DDC (Direct Digital) control systems
- Variable speed drives (improve motor & pump control)
- HVAC & boiler replacements
- Compressed air efficiency projects
- Power factor correction projects
- Heat recovery projects
- Window film projects
- Roof replacement projects

How to Generate Energy Savings

Demand Response

The "Fifth Fuel"





How to Generate Energy Savings

Demand Response

- Many utilities (& ISOs) across the U.S. are offering “Demand Response” or load curtailment programs
- The utilities have a reliability/economic challenge meeting peak demand for a limited number of hours every year – typically weekday afternoons in the summer
- To encourage customers to become “part of the solution” utilities will pay you to reduce demand when called
- Payments range from \$30/kW to \$80/kW across the country
- Requirements on notification & load shed periods vary

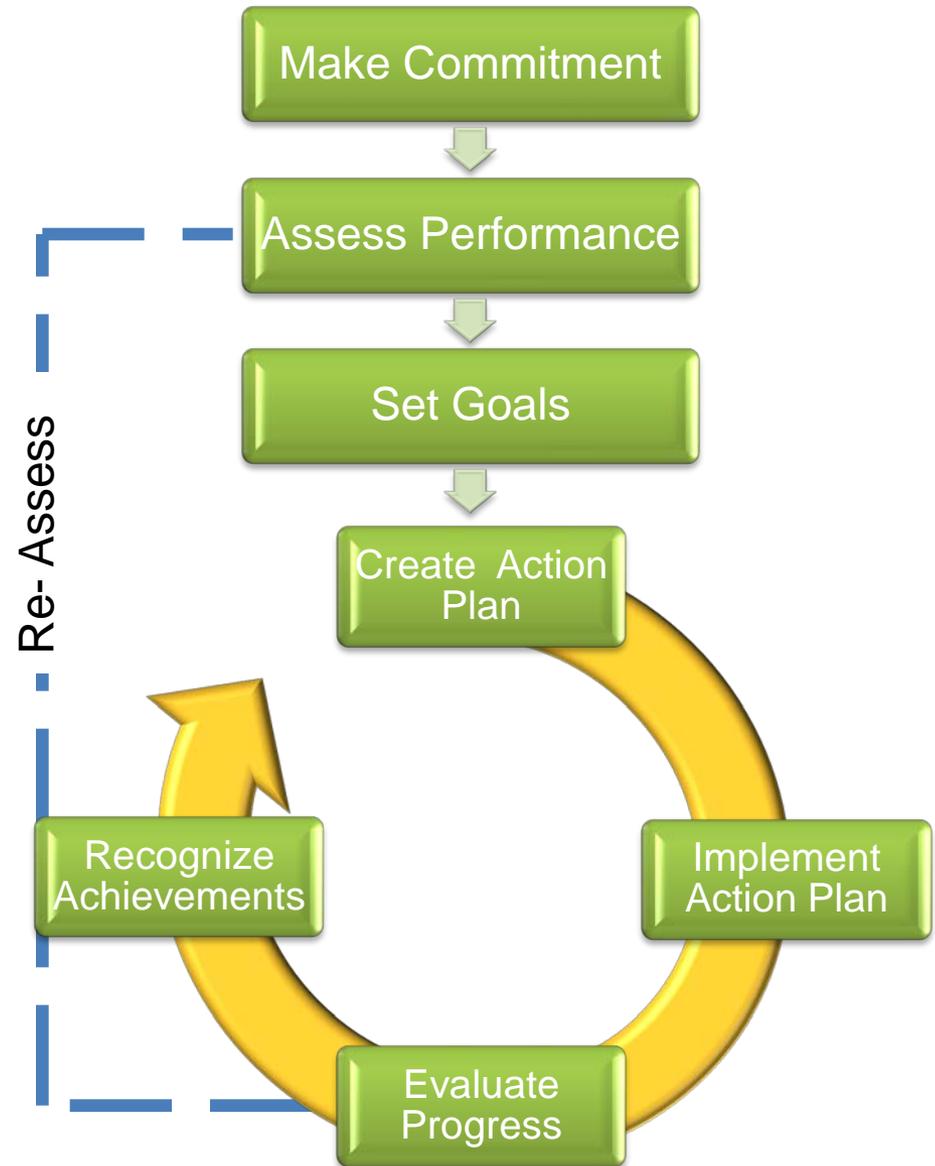


In-Action

Starting an Energy Awareness Program

In-Action Steps to Develop an Energy Awareness Program

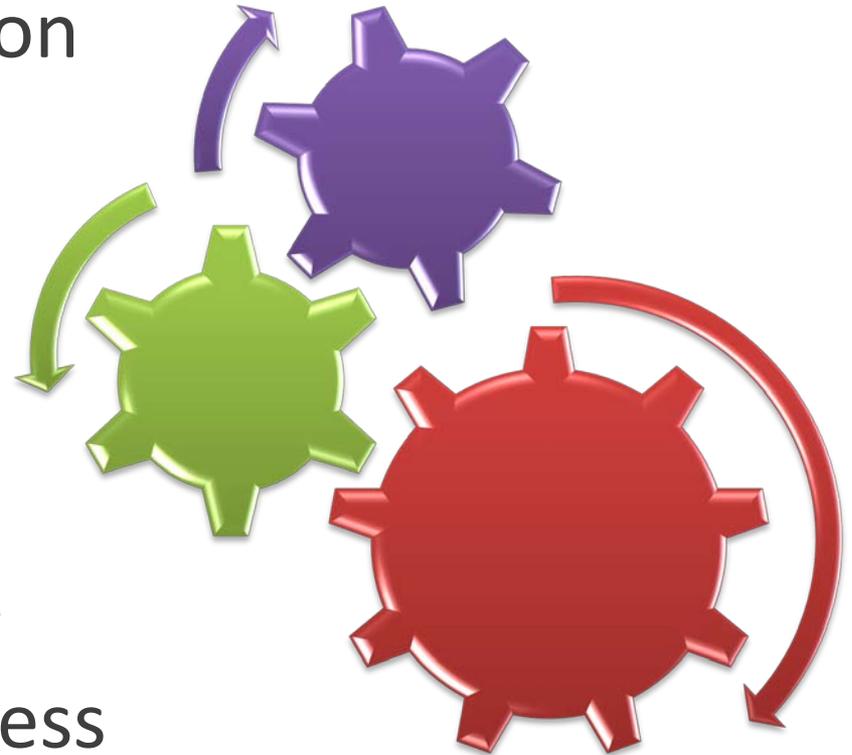
www.energystar.gov



In-Action

Developing the Action Plan

- Create a communication plan
- Raise awareness
- Build organizational capacity
- Motivate stakeholders
- Track & monitor progress



In-Action

Create a Communication Plan

- Who is your key audience?
 - Executive management
 - Sustainability team
 - Facility managers
 - Associates
- What information do they need?
 - KPI's (Key Performance Indicators)
 - Action plan
 - Measurable they can influence

In-Action

Raise Awareness

- Increase awareness through:
 - New Employee Orientation Programs
 - Poster Campaigns
 - Earth Day Events
 - Intra & Internet Sites
 - Pay Statement Mailers
 - Fairs & Summits
- Improve facility awareness
- Gain management support



American consumers have purchased more than 750 million products that have earned the ENERGY STAR® — **are they your customers?**

By choosing ENERGY STAR, these consumers are saving energy, saving money, and protecting the environment without sacrificing features, performance, or quality.

Your customers can join them and select from thousands of energy-efficient product models for their homes—appliances, lighting, home electronics, home office equipment, heating and cooling equipment, and windows.

Facts on savings your customers will appreciate ...

-  If your clothes washer is at least 10 years old, you can save up to \$100 annually by purchasing a new ENERGY STAR labeled clothes washer.
-  ENERGY STAR qualified light bulbs and fixtures typically last 6 to 10 times longer than your standard bulbs and fixtures.
-  Americans spend more than \$1 billion each year to power TVs, VCRs, and DVDs when they're turned off; ENERGY STAR qualified units can save half of that!

ENERGY STAR saves consumers money on the "hidden cost" of the product—that is, the energy bill they pay each month. Even when the purchase price is slightly higher, your customers will save money year in and year out every time they use an ENERGY STAR labeled product.

 The Energy Star designates a product that protects the environment through superior energy efficiency.

 The yellow EnergyGuide sticker predicts a product's annual energy cost.

Products earn the Energy Star by meeting strict energy efficiency guidelines set by the US Environmental Protection Agency and the US Department of Energy. In some areas of the country, utilities or state energy offices help promote Energy Star and periodically offer rebates to consumers buying products with the Energy Star. For more information, visit www.energystar.gov or call 1-888-STAR-YES (1-888-782-7937).

In-Action

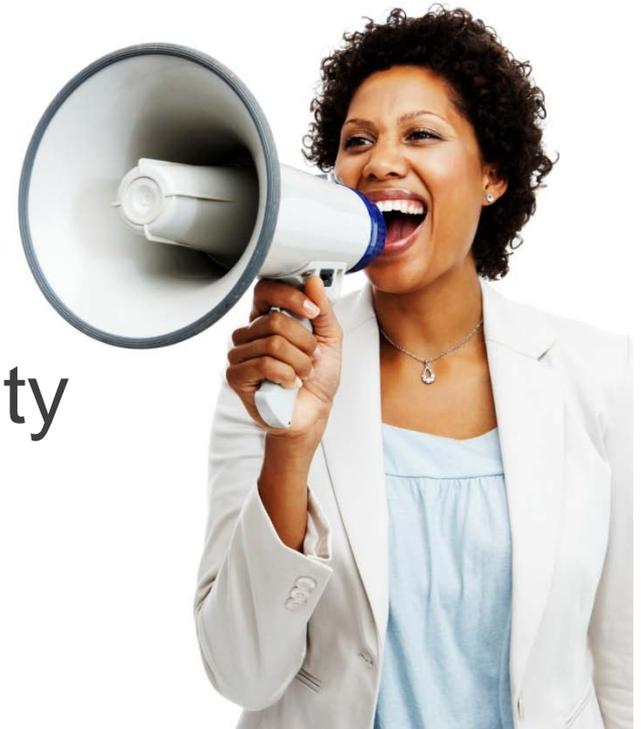
Build Organizational Capacity

- Training
 - Operational
 - Administrative
 - Specialized
- Knowledge & Management Systems
 - Best Practices
 - Technologies
 - Procedures
- Suggestions

In-Action

Motivate Stakeholders

- Internal competition
- Recognition
- Financial bonus & prizes
- Environmental responsibility
- Financial responsibility
- Performance standards



In-Action

Track & Monitor Progress

- Perform regular updates
- Conduct periodic reviews
- Identify necessary corrective actions



In-Action

Recognizing Achievements

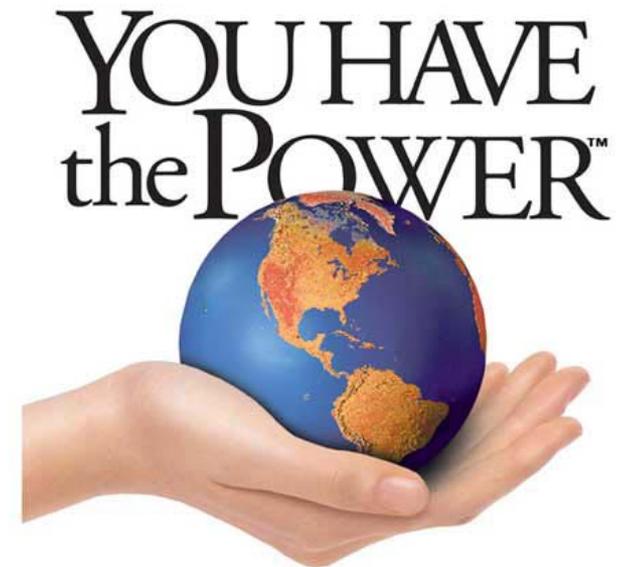
- Internal recognition
 - Determine recognition levels
 - Establish recognition criteria
 - Types of recognition
- External Recognition
 - Partnership programs
 - Performance & achievement awards
 - Public reporting



In-Action

Types of Ready-Made Materials

- Wall Posters
- Pay-Stub Inserts
- Mailings & Postcards
- Event/Campaign Posters
- Reminder stickers
- Program Posters

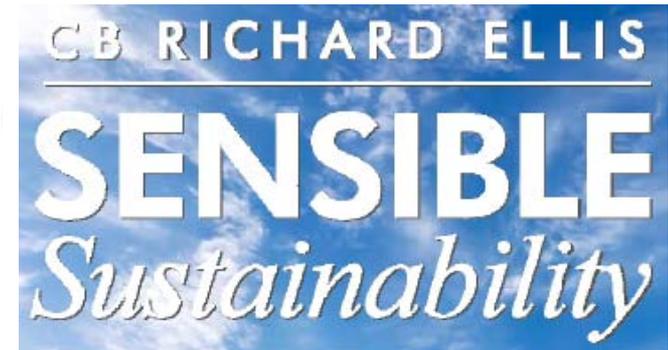


Program Posters

In-Action

CBRE Sensible Sustainability

- Initiated in 2007
- Implemented multiple programs
- Provided tenants ways to make improvements with minimal upfront cost or active owner participation



In-Action

GSA Energy Outreach Program

U.S. General Services Administration

WHAT GSA OFFERS
Buildings & Real Estate | Products & Services | Policy & Regulations

GOING BUSINESS WITH GSA
Purchasing Programs | Real Estate Services

LEARN MORE
How We Help | About GSA | Newsroom

Go Green: GSA Environmental Initiatives

Buy Green with GSA
GSA offers green products and services to help our nation build a green-energy future.
• Products
• Services
• Vehicles

Build and Manage Green Facilities
Learn how GSA initiatives can help you make the building you manage a healthier, more efficient space.
• Environmental Programs
• Sustainable Design
• Consistent Energy and Water

Green Highlights
• Administrator Johnson Says That Green Buildings are Cool
June 30, 2010
• New Energy Star Plus Office Buildings in Dallas
June 1, 2010
• GSA Sustainability Plan Goes to Work
June 2, 2010
• GSA Leads Sustainable Council to Formulate Sustainable Solutions for Federal Agencies

Buy Green with GSA Tools
• Buy green products and services with GSA Advantage.
• Buy green vehicles with GSA AutoChoice.

Energy Outreach Program
The Northeast and Caribbean Region's springtime earth-friendly events and activities started with a special Earth Day environmental fair in the lobby of the Jacob K. Javits Federal Building in New York City. More than 21 energy-related vendors exhibited their products and provided information on energy conservation for the hundreds of employees and visitors at the building who stopped to learn more about going green. In April, Acting Regional Administrator Steve Ruggieri participated in a ceremony in Jamaica, NY to celebrate EPA's presentation of an Energy Star label plaque for the Joseph P. Addabbo Federal Building, bringing the region's total of Energy Star buildings to five. Meanwhile across the Hudson River, the region held a Go Green Gala on Tuesday, May 19, on the Walnut Street Plaza outside the Peter D. Andros Federal Building in Newark, NJ. This event featured more than 40 exhibitors and provided information for individuals to save energy and green their workspaces, businesses and homes.

2008 Go Green Guide	Format	Size	Date
GSA Go Green Guide - Federal Green Fair, Newark, NJ	pdf	179k	06/15/2009
GSA Go Green Guide - Exhibitors	pdf	499k	06/15/2009
News Release	pdf	27k	06/15/2009

2007 Energy Conservation Presentations	Format	Size	Date
Energy Conservation Flyer	pdf	225k	10/17/2007
Regional Administrator's Oct. 16th Energy Agenda	pdf	280k	10/17/2007
Energy Review and Audit	pdf	79k	10/17/2007
Energy Review and Audit S&B Compliant Version	pdf	1,509k	10/17/2007
Fuel Conservation	pdf	204k	10/17/2007
Fuel Conservation S&B Compliant Version	pdf	59k	10/17/2007
Green Construction Operations and Maintenance	pdf	1,769k	10/17/2007
Green Construction Operations and Maintenance S&B Compliant Version	pdf	54k	10/17/2007
Green Products and Customer Solutions	pdf	902k	10/17/2007
Green Products and Customer Solutions S&B Compliant Version	pdf	512k	10/17/2007
New York City P&AC	pdf	663k	10/17/2007
New York City P&AC S&B Compliant Version	pdf	195k	10/17/2007

GSA

GSA Northeast and Caribbean Region

make a small change . . .

Make a Big Difference!

Lighting – consumes nearly 1/3 of a building's electric load

Maximize natural and fluorescent task lighting to minimize use of overhead lights.

Turn off lights when you leave a room for lengthy periods, especially at the end of your workday.

Computers & Office Equipment – consumes up to 1/4 of a building's electric load

"Energy Saver" modes conserve power. Enable power management features on your computer monitor, CPU, printers and copy machines.

Turn off "phantom loads". Utilize power strips to turn off your PC monitor, printers and other equipment (especially chargers) at the end of the workday.

Laptops use less power than desktop models. When you replace or upgrade computers, consider a laptop with docking station.

Personal Electronics

Personal heaters, fans, coffee pots, and other appliances are an additional strain on energy resources. Please limit your use, and for safety's sake, ensure they are turned off at the end of the workday.

Human Power

For a heart-healthy alternative – take the stairs!

Be an Energy Star!

Join us for an **Energy Awareness** celebration!

Enter to win our Energy Conservation Green Prize for you and your work team!

Learn about how you save energy and the environment in your workplace (in 150 words or less) and we'll select the best practice in each Federal Building. Please email BeAnEnergyStar@gsa.gov

26 Federal Plaza
Lafayette Street Lobby
Wednesday, October 17th
10:00 am – 2:00 pm

include your name, telephone, agency and room number

Winners and their co-workers could win a great basket of "green" goodies to share!





EPA presents

The National BUILDING COMPETITION

Working off the Waste
with ENERGY STAR®

www.energystar.gov



Servidyne's Energy Experts Barry Abramson (right) & Brent Tracy (left)



 Energy Awareness & Outreach

GovEnergy 2010



Working off the Waste
with ENERGY STAR®

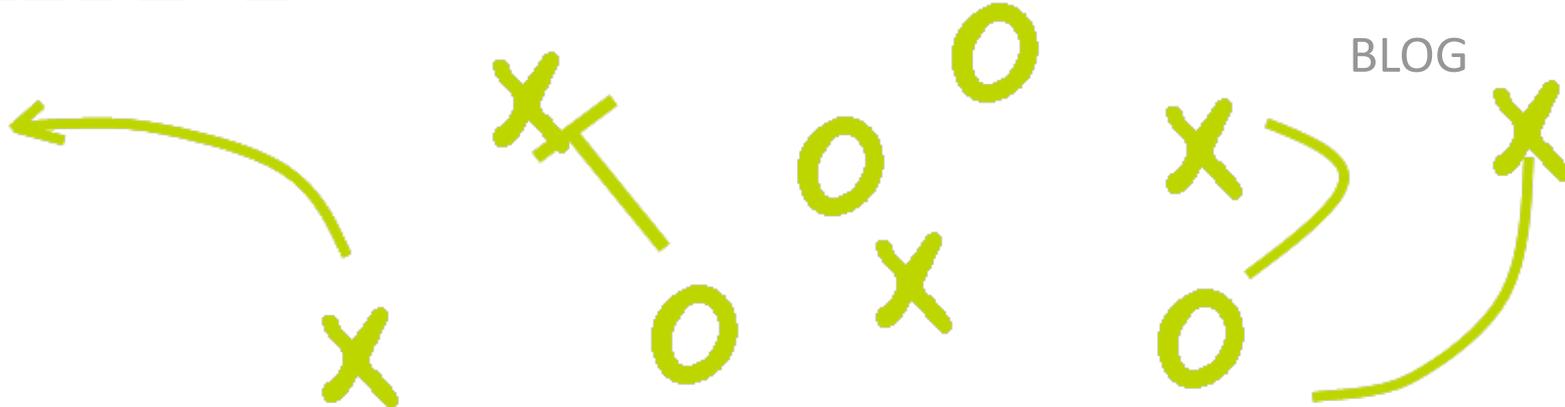
kWh





MY ENERGY COACH

BLOG



Reach Your Waste Loss Goals



 SERVIDYNE
Energy Awareness & Outreach

GovEnergy 2010



Empower Your Buildings

Energy Solutions For Today and Tomorrow
 Servidyne enables customers to cut energy consumption and realize immediate cost savings across their portfolios.

1 2 3 4



Lower
Energy & Operating Costs



Reduce
Environmental Impact



Enhance
Occupant Satisfaction

ABOUT US

Servidyne helps businesses reduce costs by cutting energy consumption and enhancing the operating and financial performance of their existing buildings. We have helped our clients save over \$8,303,000!

- SPOTLIGHT**
- [Learning From The Past](#)
 - [How to Document A Building's Requirements](#)
 - [Giving Back to the Community](#)
 - [How We Discovered LEED](#)
 - [Servidyne Announces its Largest Energy Savings Contract To Date](#)

FIFTH FUEL MANAGEMENT

During critical periods of peak demand for electricity, utilities and electricity consumers are working together to reduce consumption through demand response and energy efficiency to lessen the odds of black outs or brown outs. This capacity is now the utility industry's "Fifth Fuel," and we know how to deliver it.

Predictably. Cost Effectively. Reliably.



Energy Expertise on the Web



Bringing Energy News and Expertise to Your Inbox



In This Issue

- Deciding to Get LEED Certified
- Developing a LEED-EB Certification Strategy
- Looking for a Partner in LEED?
- A New Look for Lightbulb Packaging
- The Servidyne

Issue: 7-10

July 2010

It's Time to Get on the LEED Bandwagon

We are pleased to feature LEED certification in this month's newsletter. At Servidyne, we believe in optimizing the performance of buildings to reduce energy and operating costs, lower environmental impact, and improve occupant satisfaction. The LEED "movement" in the United States does a wonderful job of accounting for and delivering all three of these primary benefits.

For those of you who haven't yet gotten on the LEED bandwagon, LEED is an internationally recognized green building certification system, providing third-party verification that a building uses strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources sensitive to their impacts.

Developed by the U.S. Green Building Council (USGBC), LEED gives building owners and operators a concise framework for specifying and implementing practical and measurable green building design, construction, operations and maintenance solutions. At Servidyne, we work consultatively with building owners and managers to help them understand how LEED certification might help and how likely it is that it can be attained, and then we work in hand with them through a very thorough certification process. One of the fastest growing parts of our business, and we would love to help you in your efforts to have your existing buildings become LEED certified! Thank you and happy reading.

George Plattenburg
Vice President of Sales & Marketing
Servidyne

Servidyne, Your Partner in LEED

Setting the Way to a Stringent Standard

Developed by the U.S. Green Building Council (USGBC), LEED certification provides third-party verification that a facility has proven environmental performance. To qualify for this distinction, a building must...



Developing a LEED-EB Certification Strategy



From the Servidyne Sustainability Experts

In order to develop and integrate a comprehensive approach to obtaining LEED-EB Certification, you must first understand the two primary disciplines industry leaders bring to LEED-EB projects (sustainability analysts/LEED project management, and engineering consulting) and the four phases of the LEED-EB Certification process.

There are generally two consulting disciplines involved in a LEED-EB project:

- Sustainability Analysts/LEED project management activities include such items as the development of policies and program procedures; evaluation of site features; design and compilation of occupant surveys; coordination with landscaping, janitorial, pest management and waste management vendors and the review of purchasing records.



SERVIDYNE
Energy Awareness & Outreach

GovEnergy 2010

In-Action Resources



Go Green Initiatives & Energy Outreach Program



Guidelines for Energy Management



Energy Campaign Materials



BEEP[®] (BOMA Energy Efficiency Program)



Energy Awareness & Outreach

GovEnergy 2010

Resource List

- **BOMA BEEP Energy Program:** <http://www.boma.org/Training&Education/BEEP/Pages/default.aspx>
- **Campaign Materials:** http://www1.eere.energy.gov/femp/services/yhttp/campaign_materials.html
- **BOMA 7 Point Challenge:** <http://www.boma.org/getinvolved/7pointchallenge/Pages/default.aspx>
- **ENERGY STAR Partner Resources:** https://www.energystar.gov/index.cfm?c=partners.pt_index
- **ENERGY STAR Energy Awareness Action Plan:**
http://www.energystar.gov/index.cfm?c=implement_plan.implement_plan_index
- **ENERGY STAR Guidelines for Energy Management Overview:**
http://www.energystar.gov/index.cfm?c=guidelines.guidelines_index
- **US Department of Energy A Sustainable Future Putting All the Pieces Together:**
http://www1.eere.energy.gov/femp/services/energy_aware.html
- **US Department of Energy Creating an Energy Awareness Program:**
http://www1.eere.energy.gov/femp/pdfs/yhttp_ceap_hndbk.pdf
- **List of state & local energy efficiency programs:** <http://www.business.gov/manage/green-business/energy-efficiency/state-local/>
- **US Department of Energy Energy Savers:** <http://www.energysavers.gov/>
- www.servidyne.com
- National Building Competition Video: <http://www.youtube.com/watch?v=OsZQsWVrkMo>



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www.youtube.com/servidyne



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Q & A



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