Better Buildings
U.S. DEPARTMENT OF ENERGY

Extending the Benefits of Energy Efficiency Across the Value Chain

Moderator: Andre de Fontaine, DOE

U.S. DEPARTMENT OF ENERGY

Speakers

- **Clay Nesler,** Vice President, Global Energy and Sustainability, **Johnson Controls**
- **Steven Liu**, Director, Strategic Sourcing, **Legrand, North America**
- **George Andraos**, Director, Energy and Sustainability, **Ford Motor Company**
- **Jim McClendon,** Director of Systems Engineering for Design and Construction, **Wal-Mart Stores, Inc.**

Supplier Energy Efficiency Program

Clay Nesler, VP Global Energy and Sustainability

Extending the Benefits of Energy Efficiency across the Value Chain
2014 Better Buildings Summit – Washington, DC

May 2014

Johnson Controls

We are a global multi-industrial company with established core businesses in the automotive and building industries

Automotive Experience

A global leader in automotive seating and interiors including door and instrument panels, floor and overhead consoles and overhead systems.

Building Efficiency

Delivering technologies and services that increase efficiency and lower operational and energy costs in buildings.

Global WorkPlace Solutions

Creating workplaces that help people and businesses thrive.

Power Solutions

The leading supplier of automotive starter batteries and advanced batteries for Start-Stop and hybrid systems.

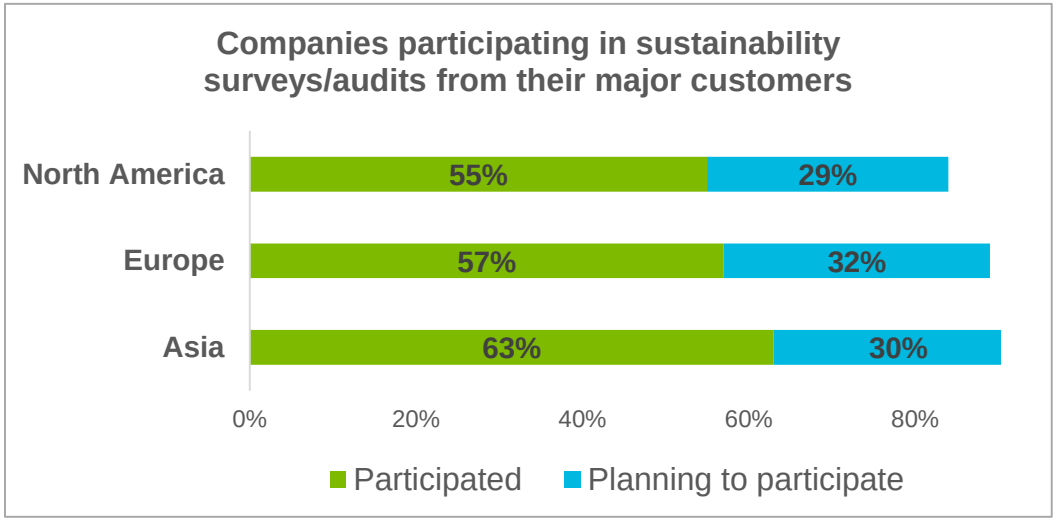
Johnson Controls

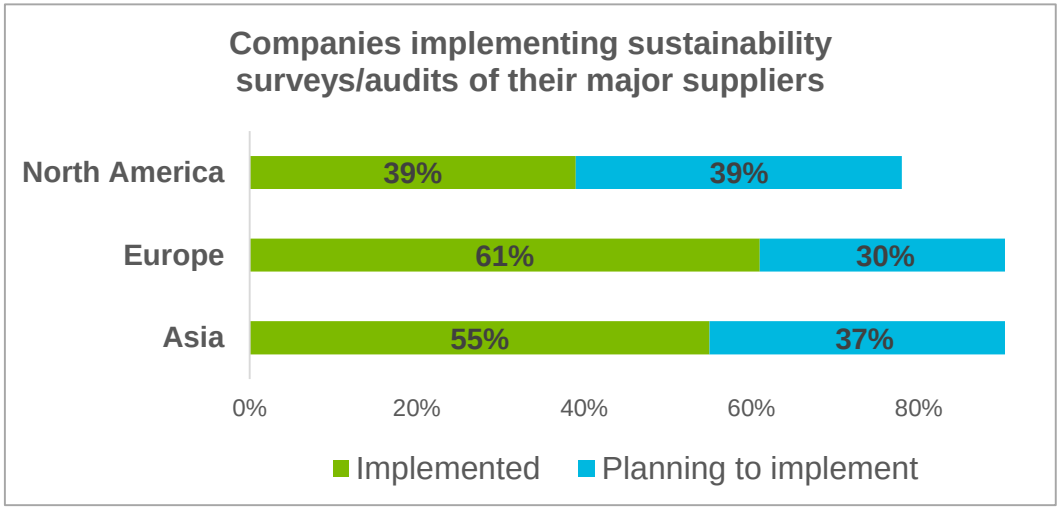
Supply chain sustainability programs typically start with surveys, audits and reporting...

2013 Energy Efficiency Indicator by the Institute for Building Efficiency (n=339)

European companies, in particular, are aggressive in surveying and auditing their major suppliers

institute for building efficiency
an initiative of Johnson Controls





http://www.institutebe.com/Energy-Efficiency-Indicator.aspx

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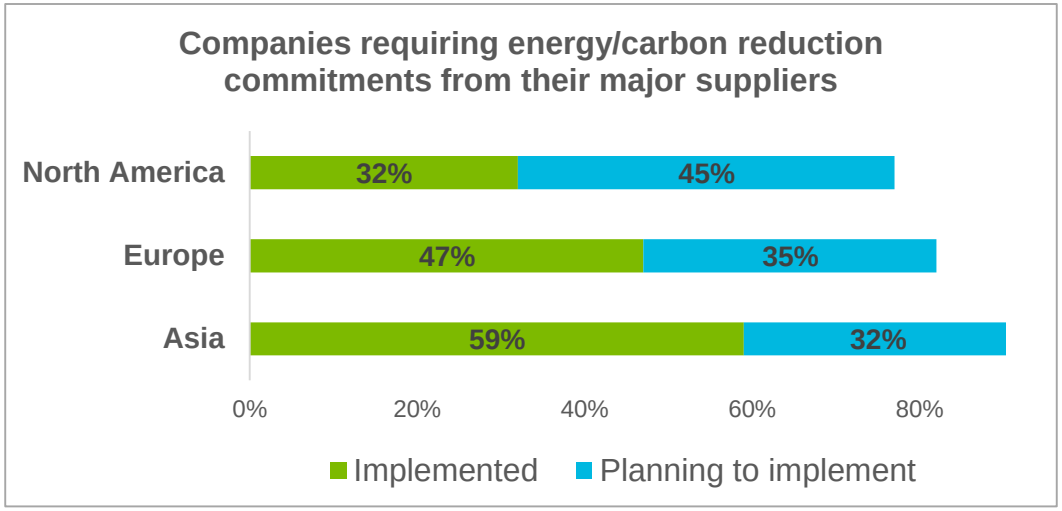
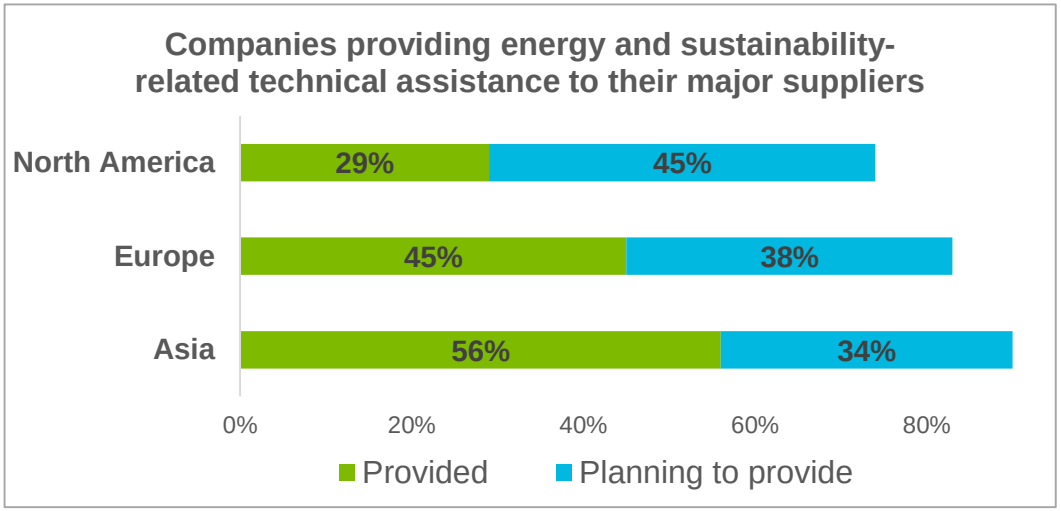
Supply chain sustainability programs then progress to supplier commitments and (sometimes) technical assistance...

The demands placed on suppliers are increasing while technical assistance from their customers lags

North American companies lag European and Asian companies in providing technical assistance to their major suppliers





http://www.institutebe.com/Energy-Efficiency-Indicator.aspx

Sharing best practices and tools with major suppliers to reduce their energy consumption

Better Buildings CHALLENGE
U.S. DEPARTMENT OF ENERGY

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Energy Performance

GOAL

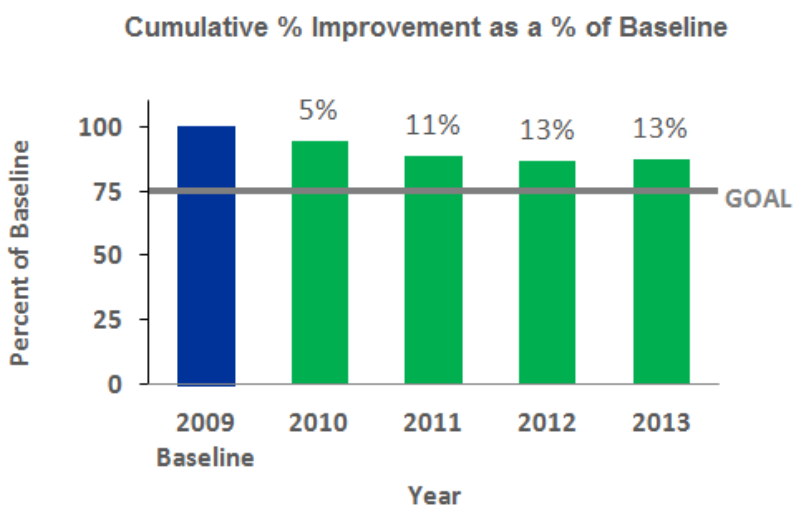
25% Reduction in Energy Intensity by 2020 from a 2009 Baseline

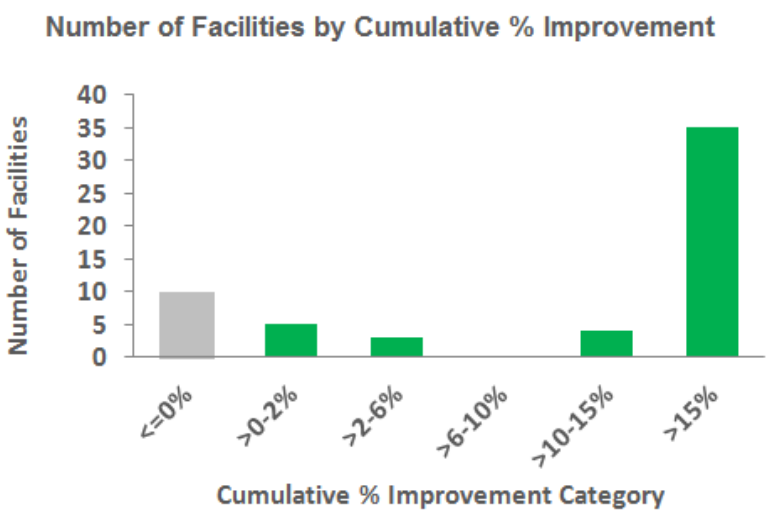
CHALLENGE COMMITMENT

69 Facilities (includes 60 manufacturing plants)

PROGRESS TO DATE

Cumulative (vs. Baseline)	13%
Annual (2013)	0%





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Pilot Project – Wolverine Tube

Customer Profile

- Preferred Supplier
- 20+ Years Relationship
- Carbon Disclosure Project Supply Chain Responder (since 2009)
- Copper Tubing & other Heat Transfer Products

Facility Profile

- Manufacturing Facility in Shawnee, Oklahoma
- 325,000 Sq. Ft.
- 36 Year Old Facility

“Energy Hunt” Assessment

- Conducted in September 2012
- Core team of 8 Wolverine plant personnel

Energy Hunt Assessment Process

Utilities

- Chiller System
- Steam System
- Compressed Air
- HVAC Delivery
- Motors, Fans, & Pumps
- Water Treatment

Energy

- Utility Best Rates
- Peak Load Management
- Rebates or Incentives

Lighting

- High Bay
- Process or Task Lighting
- Office

Process

- Hydraulic Systems
- Injection Molding
- Drying
- Heating
- Cooling
- Material Handling
- Painting
- Stamping
- Welding, Weld Gas

Building Envelope

- Dock Doors
- Operations
- HVAC system control operation
- Supply and Exhaust Systems

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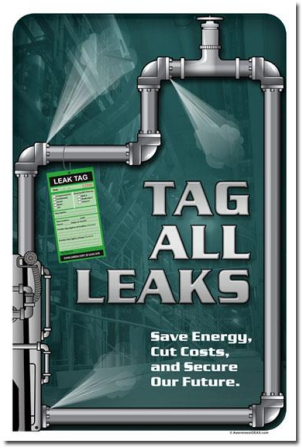
Wolverine Tube Improvements

Compressed Air System

- 40% of Compressed Air was lost in Leaks
- Conducted Employee Training to increase awareness
- Institutionalized a Leak Tag Program
- One compressor made redundant



Turn It Off Program

- Conducted Employee Training to increase awareness
- Addressed Lighting, Fans, HVAC & Process Equipment
- Installed Occupancy Sensors in Offices

Water Leaks

- Conducted Employee Training to increase awareness
- Created a Water Leak Chart

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Pilot Project – Wolverine Tube

Lessons Learned

- Stakeholder buy-in was fairly easy
- Buy-in at the plant operations level is critical to success
- Collaboration, engagement and communication are essential
- A clear action plan with accountability is important
- Culture change is difficult – can be accomplished through consistent messaging, common processes and organizational commitment

Program Objectives

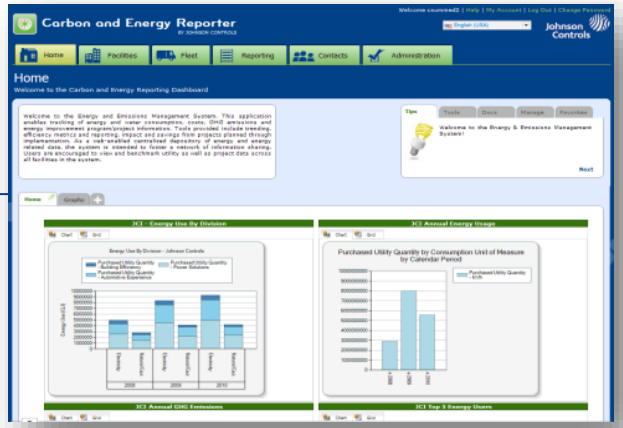
- Scale up the program in a sustainable way (technology, resources, financial)
- Make the program attractive to suppliers while securing leadership commitments for improvement
- Provide suppliers with processes, training and tools to support continuous energy efficiency improvement

"A great program! Drove our costs down without capital expense. Changed our culture regarding how we look at energy. Since this program, we have looked at six other energy savings opportunities"

Mark Brown, Engineering Manager, Wolverine Tube

Johnson Controls

Supplier Energy Efficiency Program



Basic Services provided by Johnson Controls

- Energy analysis (using monthly utility bills)
- “Energy Hunt” training and tools (check-lists, worksheets)
- Panoptix™ web-based Carbon and Energy Reporter (free for one year)
- On-site “Energy Hunt” assessment (three days on-site for training, audit and analysis)
- Preliminary recommendations (engineering and business case analysis)
- Energy savings measurement and verification (baseline and annual savings)
- Potential recognition through DOE Better Plants Program or EPA EnergyStar programs

Supplier Requirements

- Supplier agrees to implement identified improvements with a 18 month payback or less
- Johnson Controls provides basic services without initial cost to supplier
- Supplier pays for basic services after one year when energy savings in excess of cost are verified

Johnson Controls

Johnson Controls

www.johnsoncontrols.com

@johnsoncontrols

Go Further

Presentation to DOE

Ford's Go Green Dealership Program

George Andraos

Director, Energy & Sustainability

Ford's Sustainability Vision

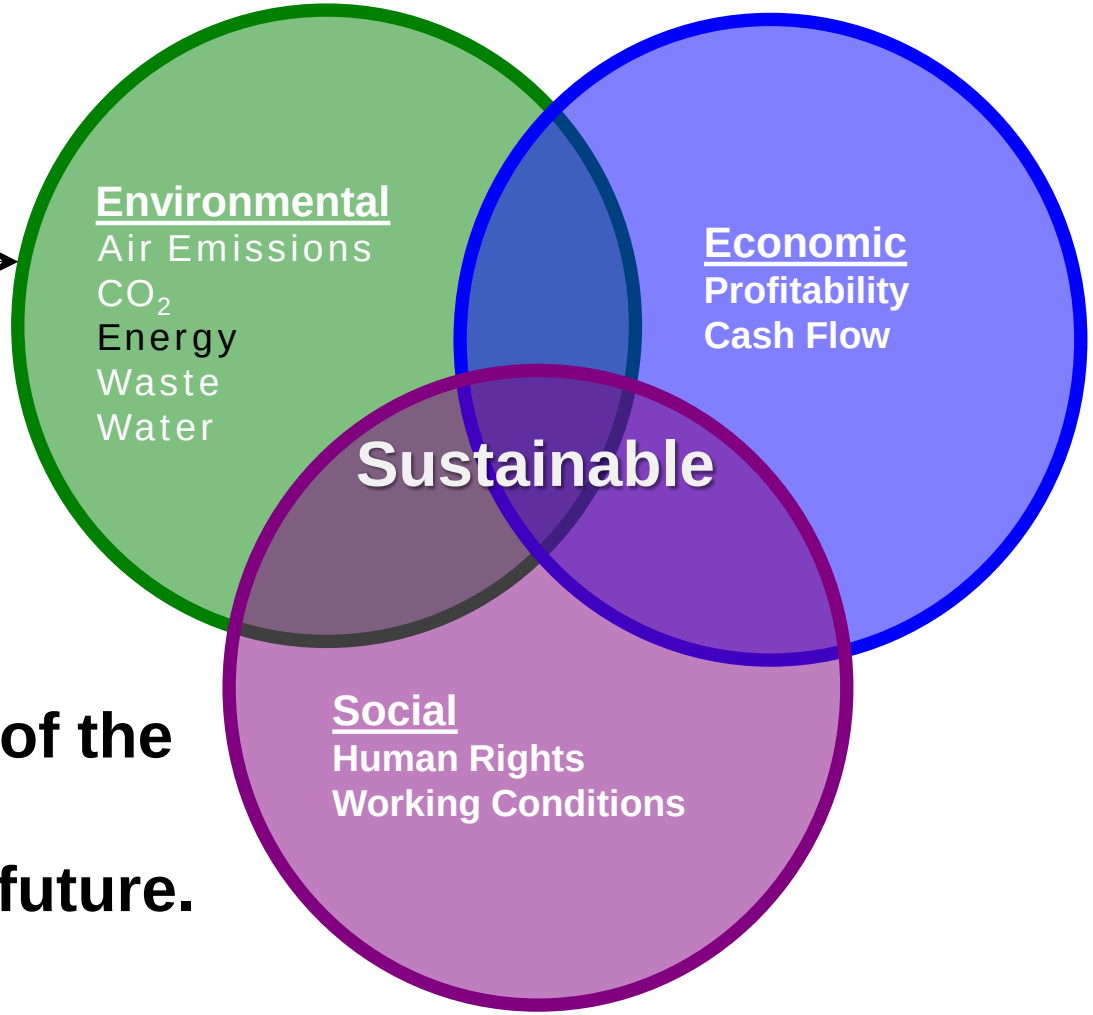
Our vision for the 21st century is to provide SUSTAINABLE transportation that is affordable in every sense of the word:

Environmentally*, *Socially*, and *Economically

"Improved sustainable performance is not just a requirement, but a tremendous business opportunity."
- Bill Ford

Sustainability at Ford – Focus on Energy Reduction

Product
Process
- MANUFACTURING
- DEALERS



Meeting the needs of the present without compromising the future.

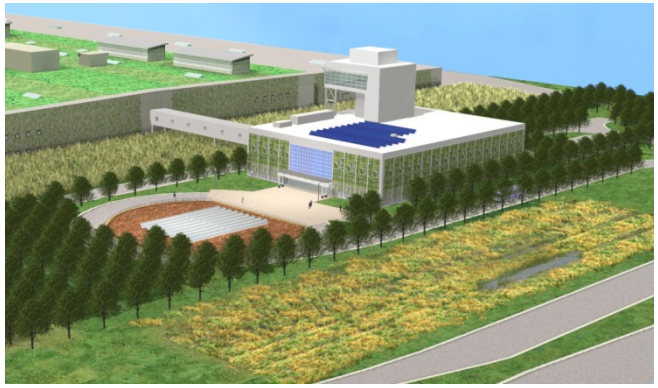
Ford Go Green Dealership Program

Expand Sustainability to the Dealership Body

Ford Go Green Dealership Program

Ford Go Green Program Background

- **Extends Ford's Commitment to Sustainability & Energy Efficiency to the Dealership Body**
  - Ford Dealers are Franchise Organizations
- **Program Developed Using National Expertise**
  - Ford Land - Energy & Engineering Expertise
  - Rocky Mountain Institute
  - Partnership with DOE



- **Implemented Using National Talent**
  - KEMA, Energy & Sustainability
  - New England Energy Management
  - Harris Lighting
  - Ford Land Energy Team
  - Team of 4 Energy Engineers led by Patrick Smithbauer, P.E., LEED AP

Ford Go Green Dealership Program

- **Mirror Corporate Commitment to Energy Efficiency & Sustainability**
- **Encourage Dealership Investment in:**
  - Energy Efficiency Improvements
  - Facility Upgrades
- **Reduce Dealership Energy Consumption & Energy Cost**
- **Go Green Assessments are Encouraged as Part of Several Ford Programs**
- **Dealerships are Independently Owned and Operated**

Ford Go Green Dealership Program

Go Green Assessment Process

- **Review Energy & Utility Usage**
  - Lighting - Exterior & Interior
  - HVAC Systems
  - Water Usage
  - Building Envelope
  - Possible Renewable Energy Use
- **Assessment Report**
  - Perform an On-Site Assessment
  - Prepare a Comprehensive Report
  - Conduct a Detailed Review with the Dealer

Ford Go Green Dealership Program

Go Green Facility Assessment Process

Monthly & Annual Energy Used By Source

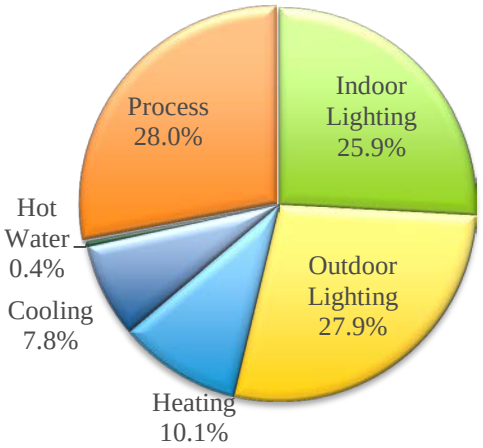
- Electrical Power
- Natural Gas
- Fuel Oil, Propane, Reused Waste Oil, Other

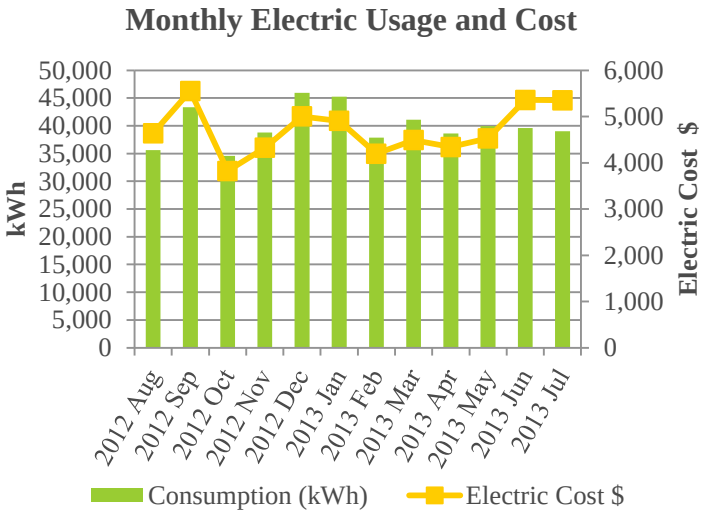
Existing Unit Cost of Energy Used

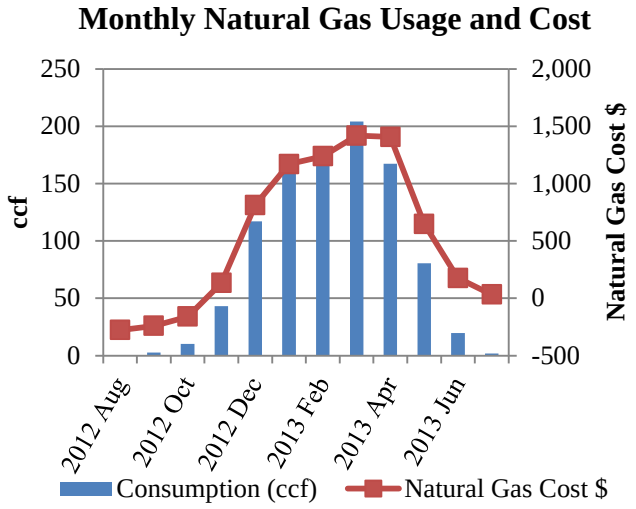
- Electrical - $ per KWH
- Natural Gas - $ per Therm

Existing Annual Energy Used By System

- Lighting Systems
  - Interior
  - Exterior
- HVAC Systems
- Domestic Hot Water
- Office Equipment
- Process Equipment







Ford Go Green Dealership Program

Go Green Facility Assessment Process

- **Recommended Upgrades**
  - Interior Lighting Fixtures & Controls
  - Exterior Lighting Systems
  - HVAC Upgrades and Temperature Set Point Modifications
  - Building & Process Modifications
  - Water System Changes
  - Potential Renewable Energy Implementation

- **Financial Analysis**
  - Annual Energy Savings
  - Cost of Implementation
  - Identification of Incentives
  - Payback Calculation

Ford Go Green Dealership Program

Go Green Facility Assessment Process

- **Report Provides Detailed Line Item Recommendations**
- **Dealerships Make Implementation Decisions**
  - Item-by-Item Basis
  - Implementation is not Mandatory
- **Ford Provides**
  - Continued Follow-up and Dealership Support
  - Recommended Go Green Facility Standards
  - Evaluation & Development of System & Fixture Recommendations
  - Assist Dealerships in Obtaining Preferential Pricing
    - Negotiate Pricing with National Suppliers
    - Use Ford's Buying Power
    - Allow Dealership to Use Ford's Preferential Pricing

Ford Go Green Dealership Program

- **Achievements**
  - More than 1700 Dealership are Involved
  - Identified Significant Potential Savings with Excellent Payback
  - Dealership Participation is Voluntary
- **First Group of Go Green Assessments - 150 Dealerships**
  - $41,100.00 Annual Savings
  - 29% Percent Reduction In Energy Use
  - 3.2 Years Payback Calculation
- **Second Group of Go Green Assessments - 120 Dealerships**
  - $23,300.00 Annual Savings
  - 23% Percent Reduction In Energy Use
  - 4.1 Years Payback Calculation

Ford Go Green Dealership Program

Ongoing Activities

- Continue Go Green Assessments
- Recognize Dealerships for Energy Upgrades
- Provide Ongoing Technical Support to Dealerships for Energy Reduction
- Provide Energy Guidelines for Facility Upgrades
- Extend Ford Vendor Purchasing Power to Dealerships
- **Bring Value to the Dealership**

Ford Go Green Dealership Program

Program Benefits

- Energy Consumption Reduction
- Environmental Impact Diminished
- Carbon Footprint Decrease
- Educational Opportunity
- Expands Ford's Commitment to Sustainability
- DOE Participation
- Improved Facility Environment

Reduced energy consumption and operating expenses	Reduced environmental impact of selling and maintaining vehicles	Marketing and outreach opportunity	Mirrors Ford's corporate commitment to sustainability	Potential LEED, Ford or Energy Star recognition	Improved indoor environment

CHALLENGES

Ford Go Green Dealership Program

Challenges

- **Make It Easy for the Dealerships**
- **Maintain Communication**
- **Do Not Depend Strictly on EMail**
- **Utility Information is Difficult to Obtain**
  - Utility Gathering Is Not a Dealership Priority
  - Need to Identify the Appropriate Dealership Contact Person
  - Maintain Personal Ongoing Dealership Telephone Calling
- **Dealership Assessment Reviews (Conference Calls) Are Challenging to Schedule**
  - Multiple Participants – Dealership, Assessor/Consultant, Ford
  - Nearly 1800 Enrolled Dealerships
- **A Nearly Dedicated Person is Needed for Gathering Utility Information and Scheduling Dealership Conference Call Reviews.**
- **A Database System Is Needed to Manage the Information**

U. S Department of Energy

and

Ford Motor Company

Ford Go Green Program – Model Project

U.S Department of Energy Better Plants Challenge Partner Program

- **The Go Green Dealership Recognition Program is Ford's Implementation Model Project for the U. S. Department of Energy Better Plants Challenge Program.**

Go Further

Better Plants CHALLENGE U.S. DEPARTMENT OF ENERGY

Ford Go Green Program – Dealership Recognition

Dealership Award Program

- **Significant Energy Reduction**
- **Achieve at Least a 25% Reduction in Annual Energy Usage as Part of the Ford Facility Upgrade Program**
  - Compare Actual Bills to Previous Year
  - Calculate the Energy Reduction for Complete or Committed Improvements
  - Adjust for Physical Size Changes
  - Normalize for Yearly Climatic Data - Heating & Cooling Degree Days

Ford Go Green Program – Dealership Recognition

Go Green Facility Assessment

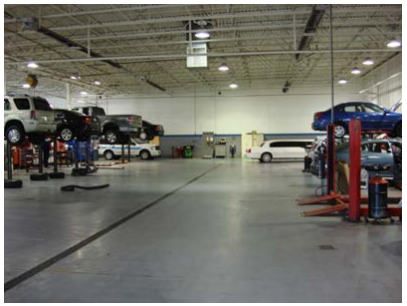
Example:

Sutton Ford Lincoln

Matteson, IL

Existing Energy Use Before Upgrades

- Electricity 1,036,000 kWh $0.1026/kWh
- Natural Gas 226,000 Therms $0.8074/Therms
- Total Equivalent Energy 1,2334,000 kWh



Go Green Assessment Recommendations & Savings

• Interior Lights	$ 5,660	Upgrade to T8 Fixtures
• Exterior Lights	$36,590	Upgrade to High Efficiency HID
• HVAC & Other	$ 1,440	Set Point & Vending Misers
• Total Savings	$43,690	

Ford Go Green Program – Dealership Recognition

Go Green Facility Assessment

Example:

Sutton Ford Lincoln

Matteson IL

Actual Energy Improvements Implemented

• Interior Lights	$20,860	Upgrade to T8 Fixtures – Also HID to T8 Fixtures
• Exterior Lights	$33,400	Upgrade to LED Fixtures (Calculated - Newly Installed)
• HVAC & Other	_____	Under Review
• Total Savings	$53,260	

Energy Usage Reduction (Calculated)

• Interior Lights	203,350 kWh Reduction
• Exterior Lights	325,510 kWh Reduction
• Total Reduced	528,860 kWh Reduction

- Initial Total Energy Use 1,2334,000 kWh (Prior to Upgrades)

43% Reduction of Total Energy Used

Ford Go Green Program – Dealership Recognition

Dealership Award Program

- **Special Recognition - Exceptional Application of Renewable Energy**
- **Use Renewable Energy (Solar, Wind, Geothermal) for At Least 25% of the Annual Energy Consumption of the Facility**
  - Measure/Meter the Renewable Energy Generated and Compare to Total Facility Energy Used
  - Calculate the Renewable Energy from Renewable Sources

Ford Go Green Dealership Program

Go Further

What is Next

- **Reach out to Dealerships with More Opportunities and Support for Energy Savings**
- **Recognize Energy Efficient Dealers on an Annual Basis**
- **Continue Relationship with DOE**
- **Engage in an Energy Star Program**
- **Develop Standards and Implement New Technologies**
- **Encourage Renewable Energy**

Ford Go Green Dealership Program

Sustainability Extended to the Dealership Body

Extending the Benefits of Energy Efficiency

Jim McClendon
Walmart Design

08May2014

A Brief History; Formats & Footprint

Quick Stats:
71 Banners
>1 Billion SF
>200 Million Cust/Wk
>2 Million Associates
>10,000 Stores/Clubs
27 Countries

Walmart
Save money. Live better.

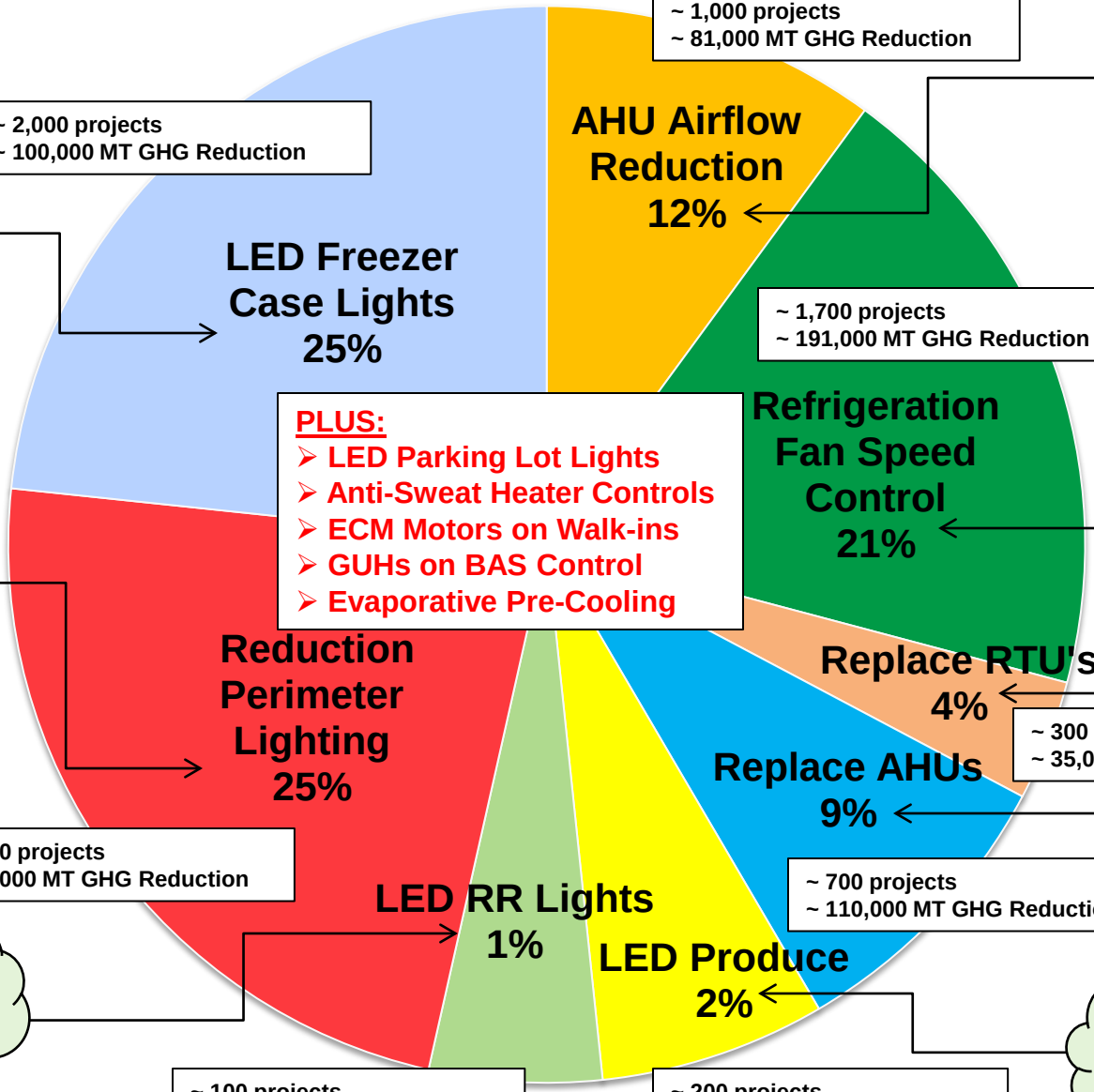
Background Goal

2005 GHG Goal

'Reduce the greenhouse gases at our existing store, club and DC base around the world by 20% over the next 7 years'

Design and build a new prototype that is 20% more efficient and produces 25% fewer greenhouse gases that our 2005 prototype

~8,000 Projects Completed (2005 – 2011):



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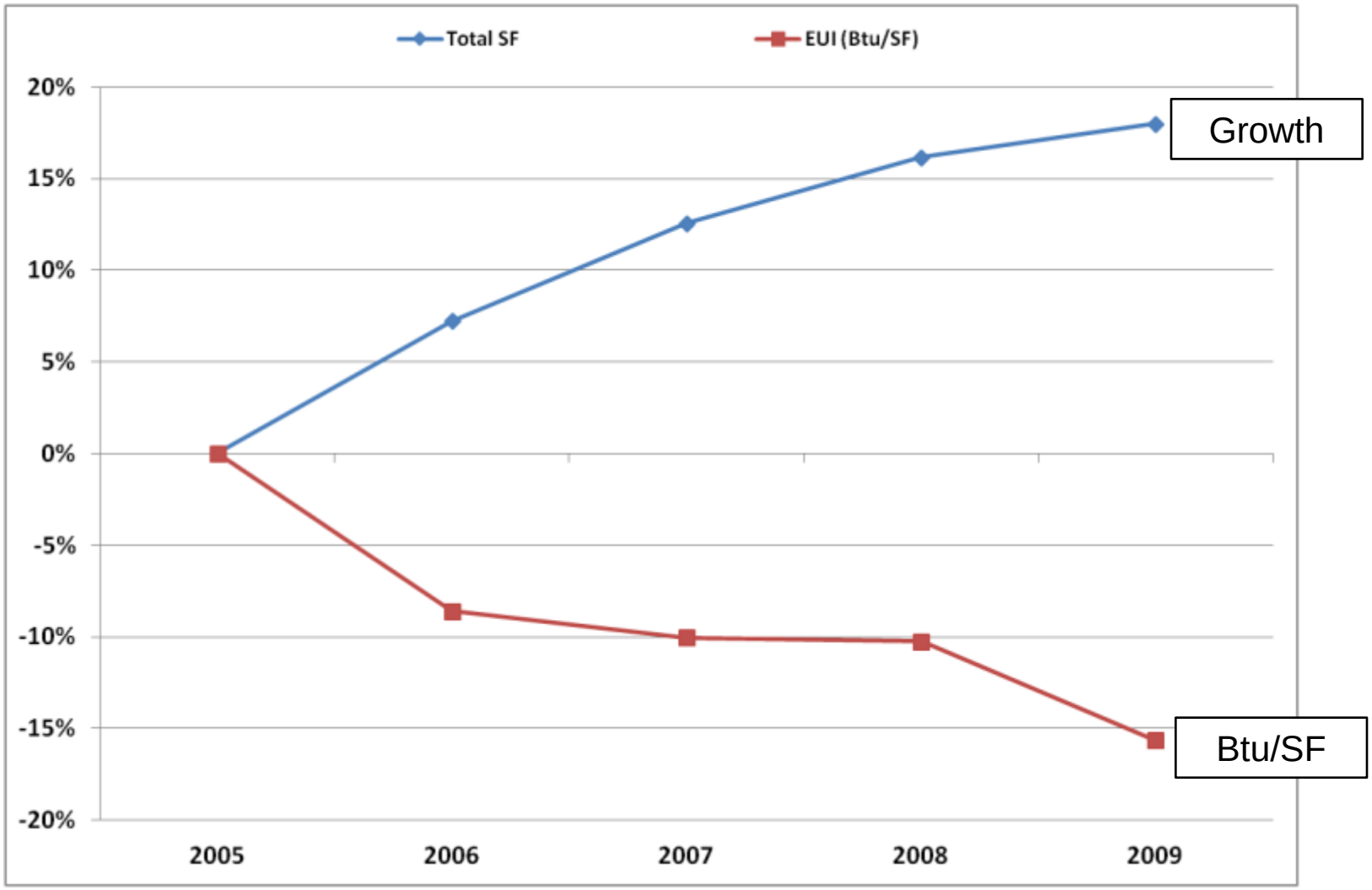
Energy Achievements
(US Only)



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DEVELOPMENT TIMELINE

FIRST TEST
LED Parking Lot Lights
NHM #3497 detailed Full

PROTO
LED light for produce

Green signage is **Proto**

Green & White LED signage Testing; Red is **Proto**

LED Case Lights **Proto**

DOE

FIRST SUP TEST
LED Parking Retrofit#5260 Rogers, #359 Fayetteville, #3828 Longview

FIRST INSTALL
McKinney , TX
Gen-1 LED Case Lts

FIRST INSTALL
#26 Leavenworth SC
New LED parking

PROTO
LED Parking Lot

White signage is **Proto**

Red LED signage Testing

CBP

DOE

1st Full Store LED
#5990 Wichita

2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | ...2013

Energy Efficiency Projects → 8000 Projects

Concept Development

McKinney, TX #206
Experimental Project
Open

Aurora, CO #5334
Experimental Project
Open

HE.3 Projects
#1954 Sanford, ME
#3860 Liberty, OH
#1151 Kansas City, KS
Grand Open

HE Proto Pilots

1st 100% LED SUP
So Euclid, OH

DOE

DOE

1st CO2 Refrigeration TEST
Sam's #8202 Sandfly, GA

HE.1 Projects
4553-Kansas City, MO
#3837 Rockton, IL
#4240 Highland Village, TX
Grand Open

HE.2 Projects GO
#4531 Romeoville, IL
#3731 Bernalillo, NM
#4321 Wichita, KS
#1800 Garland, TX

HE.6 Projects
#2735 Sacramento, CA
#6622 Sacramento, CA
#5134 Bakersfield, CA
Grand Open

PROTO CO2 Refrigeration

Current Motivation; 15April2013, Announced Two New Corporate Energy Goals

Walmart is on the path to being supplied by 100% renewable energy.

We will take a two tiered approach by both increasing renewable energy usage and increasing energy efficiency with the following commitments:

Commitment 1: scale renewables

Public Goal

Drive the production or procurement of 7 billion kWh of renewable energy globally by December 31, 2020—an increase of over 600% versus 2010

Commitment 2: accelerate efficiency

Public Goal

By December 31, 2020, reduce the kwh/sq.ft. energy intensity required to power our buildings around the world by 20% versus 2010

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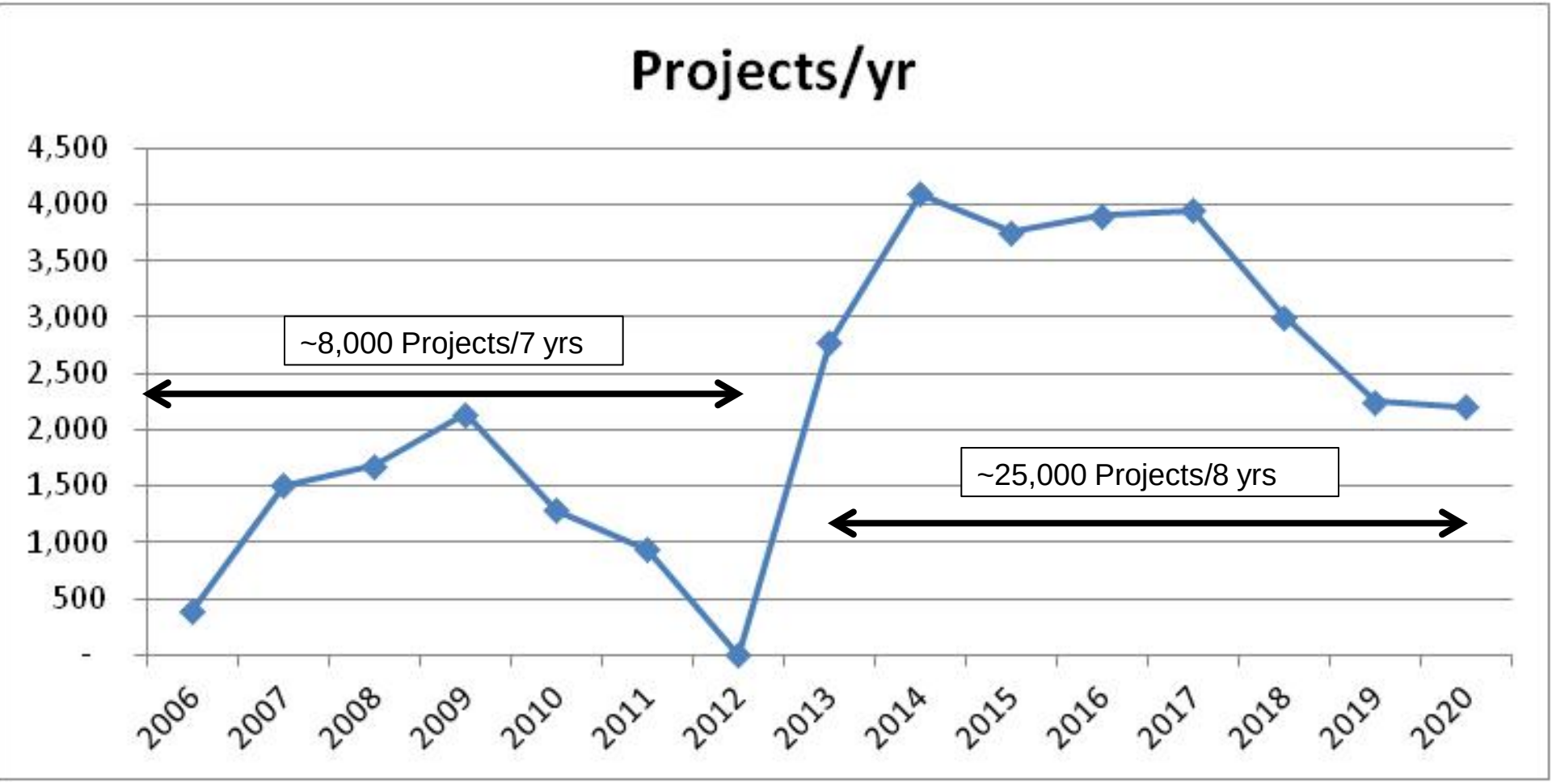
EE Projects Opportunities Example → 2005 Goal vs 2020 Goal



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Main Takeaways & Strategies

- *Understand the footprint*
  - *Monthly utility data at minimum / submeter data is better*
  - *All energy forms; electric, gas, other*
  - *Sort by format, region, operation*
  - *Use for ECM identification & ROI evaluation*

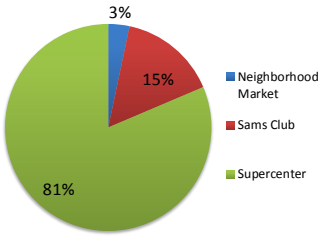
- *Look for patterns & trends → establish 'normal' and identify the outliers*
  - *Range of deviations*
  - *Best / worst performers*
  - *What's right – what's wrong*

- *Initiative Ideation*
  - *Int/Ext SMEs, Utilities, Suppliers, NGOs, GO's, Formal/Informal…*
  - *Sort by; 1) Load Reduction, 2) Free Energy, 3) Efficiency*
  - *Filter by; 1) OTS-ROTS-NT, 2) Return on Investment, 3) Resources*

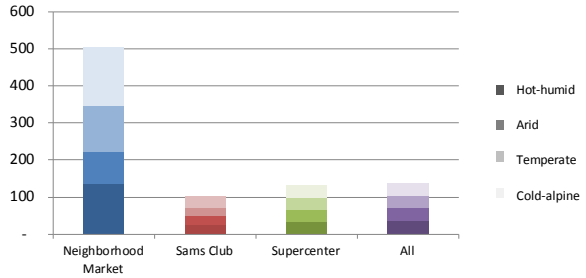
Portfolio at a Glance

Quick Facts

Portfolio-wide energy use by store type



Average portfolio-wide energy use intensity by climate type



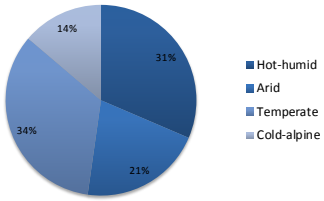
This tab provides a static look at Walmart's portfolio of Neighborhood Market, Sams Club, and Supercenter stores. It breaks down energy consumption by climate zone and by store type. It also provides a snapshot of weather-normalized store performance relative to a baseline store that represents how a store ought to perform. For a dynamic tool that allows more detailed filtering based on additional criteria, please see the "dashboard" tab.

Portfolio . Supercenters consume 81% of the energy of all stores examined. Temperate climates dominate energy consumption across all stores, followed by cold-alpine and then by hot-humid climate zones. Stores in arid climates consume the least amount of energy across all three store types, and have the highest number of stores that consume less energy than the baseline store.

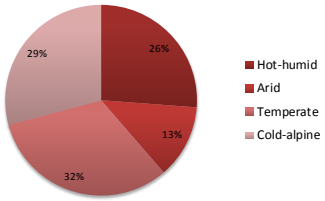
Store Type . Temperate climates dominate Supercenter energy consumption, followed by cold-alpine and hot-humid climates. Temperate and cold-alpine climates dominate Sams Club energy consumption. Hot-humid and temperate climates dominate Neighborhood Market energy consumption.

Energy Use by Climate Type

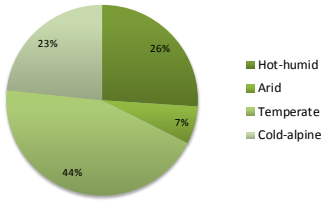
Neighborhood Market



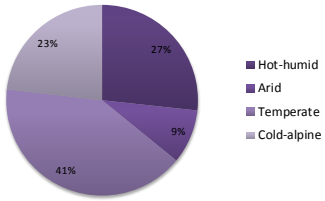
Sams Club



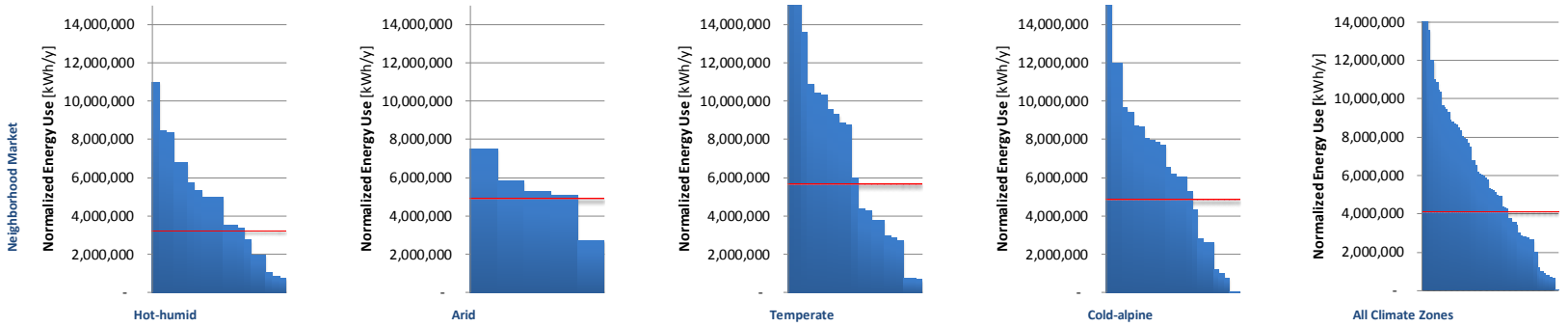
Supercenter



All



Store Performance Relative to Baseline by Climate Type



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Store Dashboard

Inputs

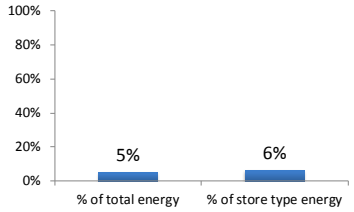
Select a store type and a climate zone from the drop-down menus above. Select " * " to include all of the categories in the analysis.

Select a store type Supercenter

Select a climate type Arid

Quick Facts

Percent of portfolio-wide energy use

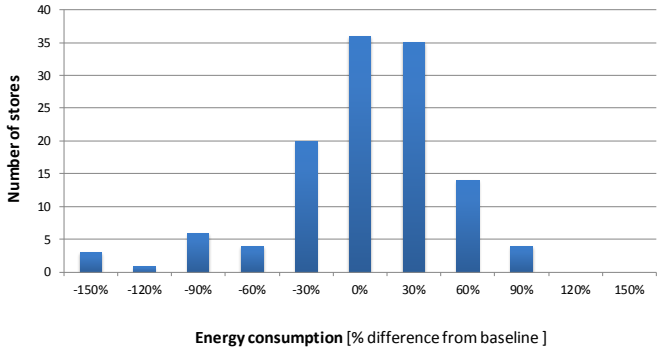


This tab allows stores to be filtered by store type and by climate zone to show store performance and electricity end use break down for stores meeting a specific set of criteria. It also generates a list of outlier stores ranked worst to best that should be examined more closely. For store-level details, select a store from the drop down menu and click the button in the lower right corner of this dashboard.

A dynamic, filterable data table is provided on the "data table" tab. This allows for the portfolio to be filtered by a number of different criteria, including store type, climate zone, prototype, protogroup, performance relative to baseline, and total energy consumption, location, and area.

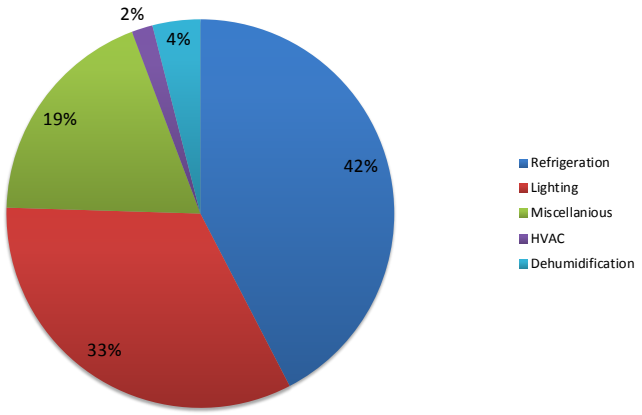
Store Performance Histogram

This graph shows the number of stores with the store type and climate type selected above that fall within a certain percentage range of the baseline. Negative values indicate that the store uses that much less energy than the baseline and is thus performing better than expected. Positive values indicate that the store uses that much more energy than the baseline and is thus performing worse than expected.



Click the up and down arrows on the sliding bar below to change the bin sizes in the histogram.

Electricity End Use Breakdown



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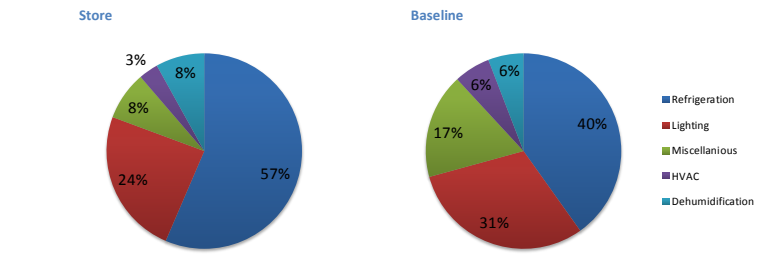
Store Detail

Store Number	4807	Rank	0	of	601	Percent difference from baseline	-107%

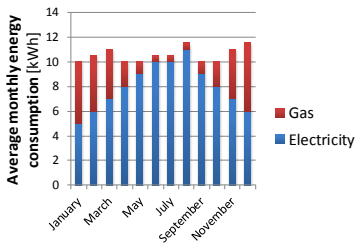
Metadata

Store type	SAMS CLUB
Prototype	88T
Protogroup	SAMS
Address	8711 N FREEWAY (I-45 at Gulf Bank)
City	HOUSTON
State	TX
Zipcode	77037
Climate Zone	Temperate
Open date	8/6/2009
GO date	8/6/2009
Area	132,485

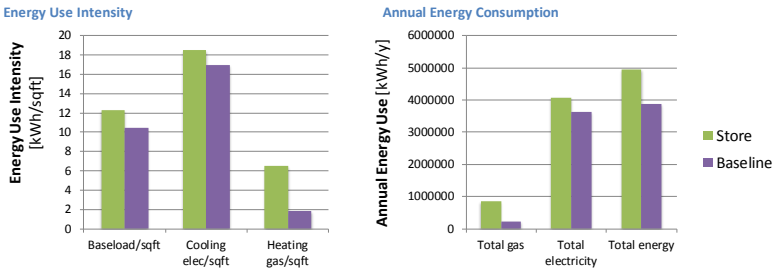
Electricity End Use Breakdown



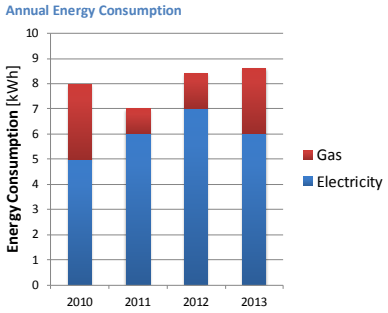
Average Monthly Energy Profile

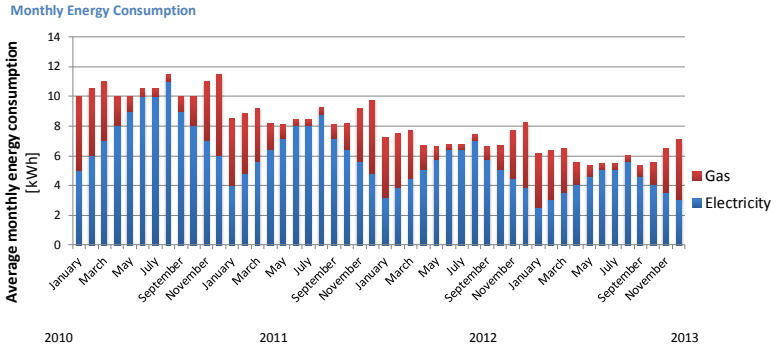


Energy Source Breakdown



Trends over Time





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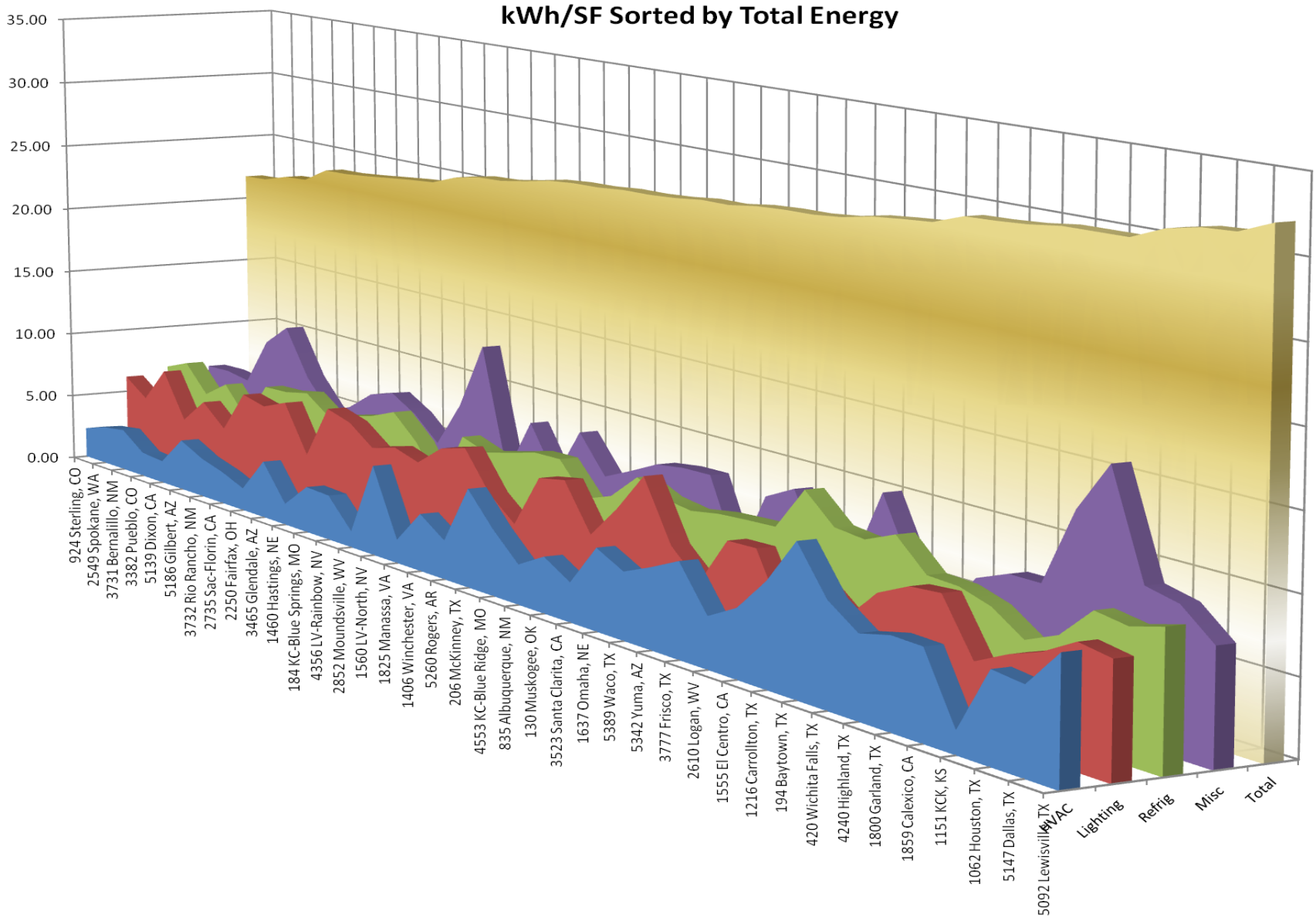

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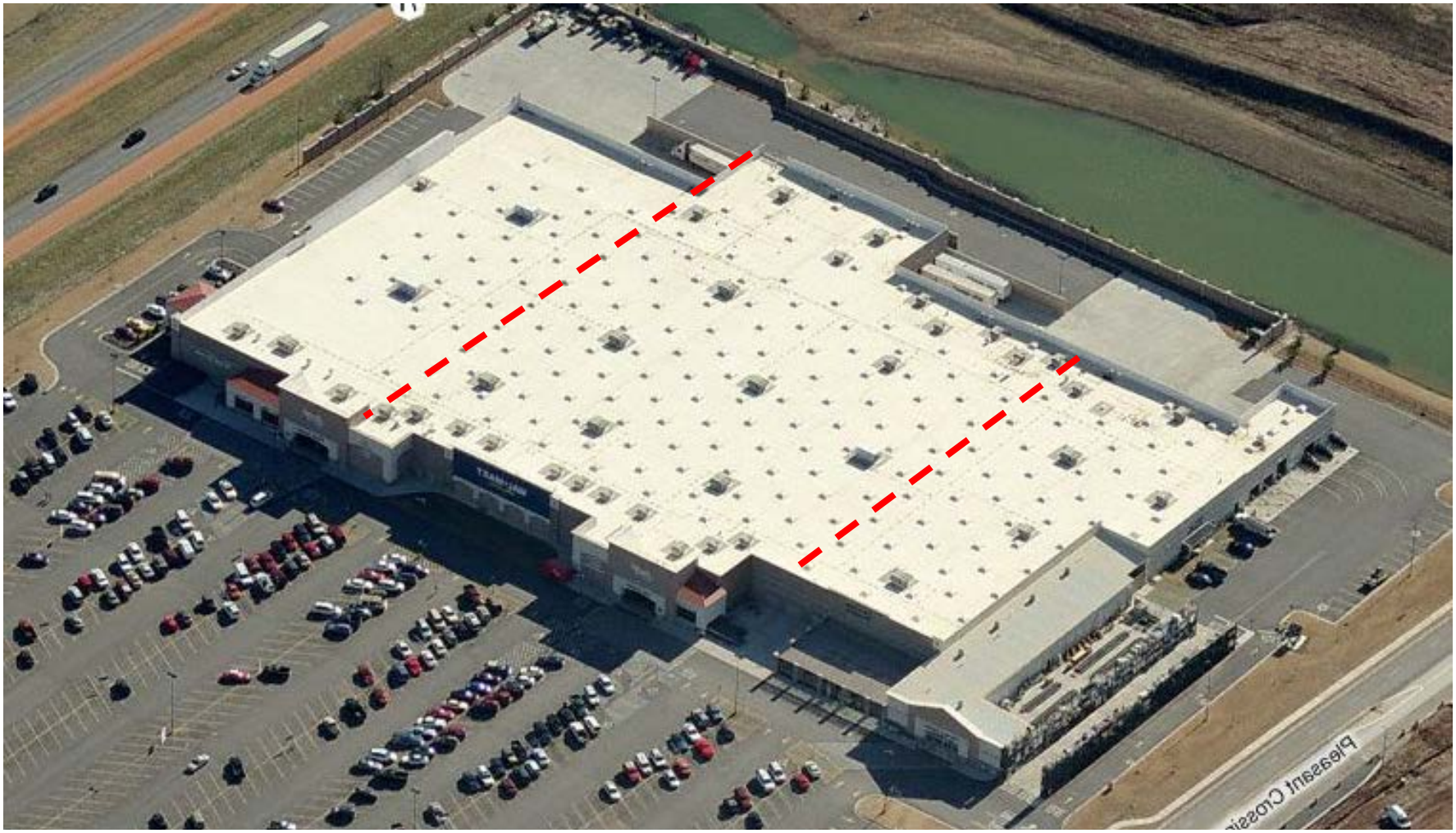
What's the Next Energy Frontier?



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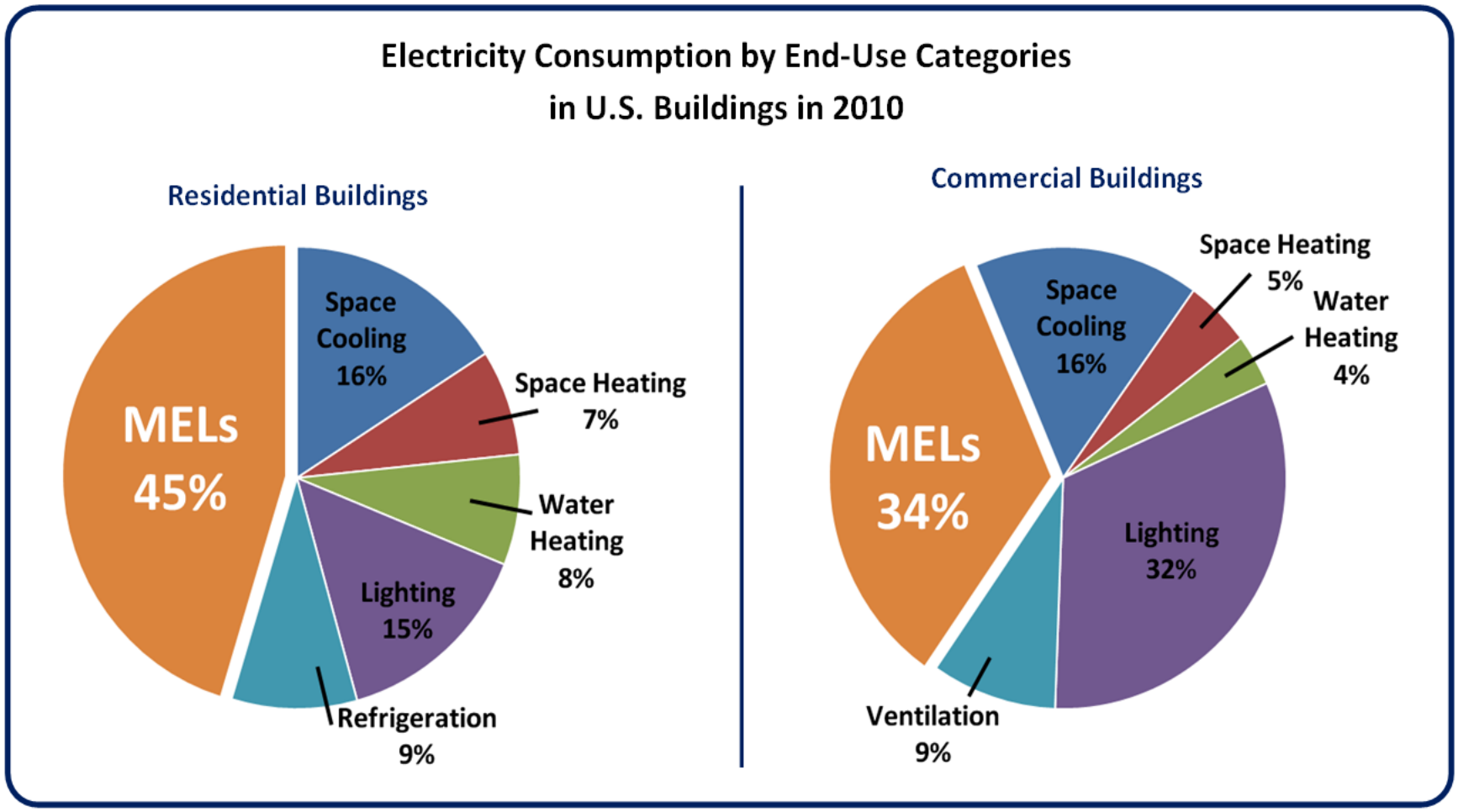
2020 Energy Goal – Next Frontier



Source: All data is from the 2009 DOE Buildings Energy Data Book. Residential building data from page 2-7, and commercial building data from page 3-5.

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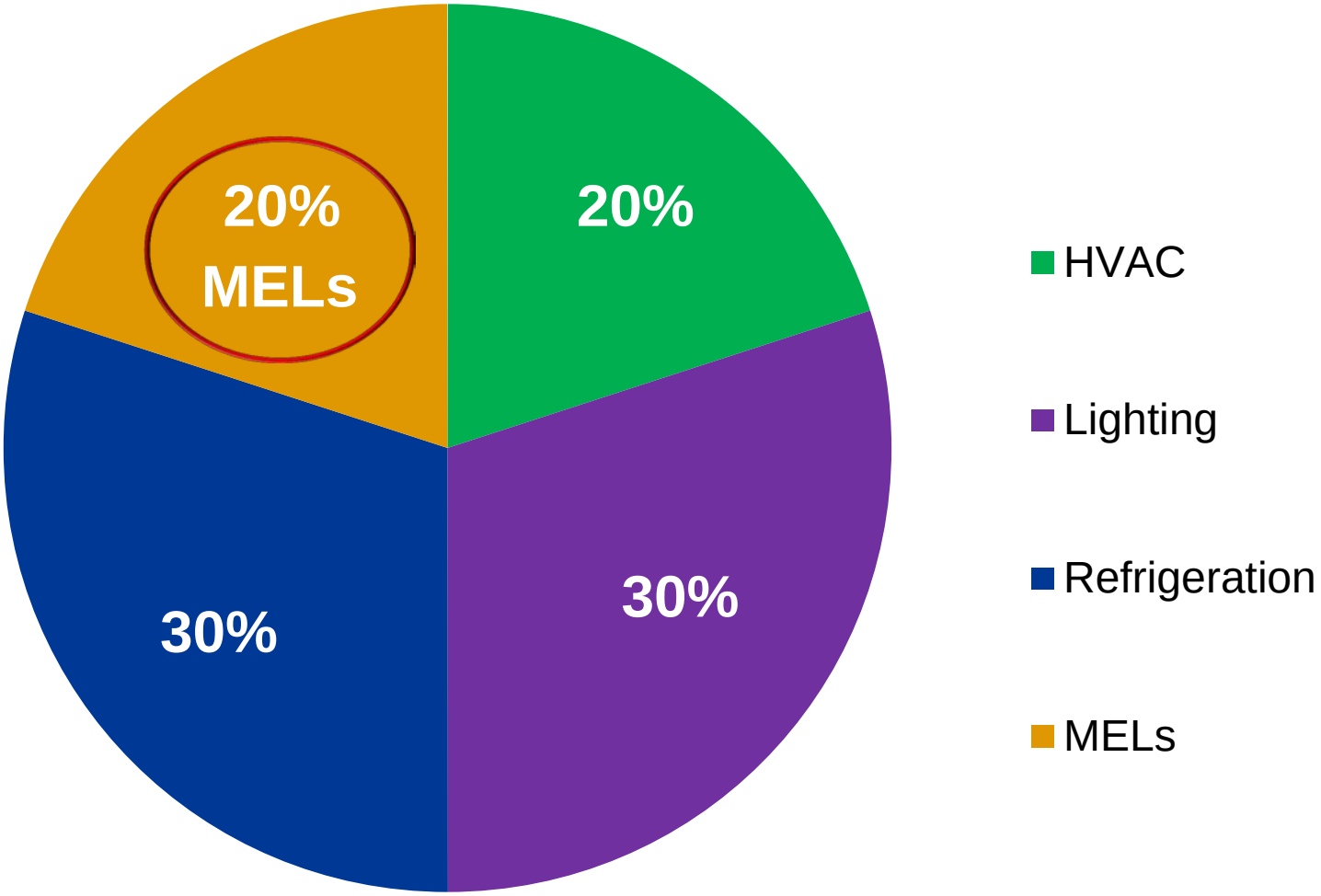
2020 Energy Goal – Next Frontier



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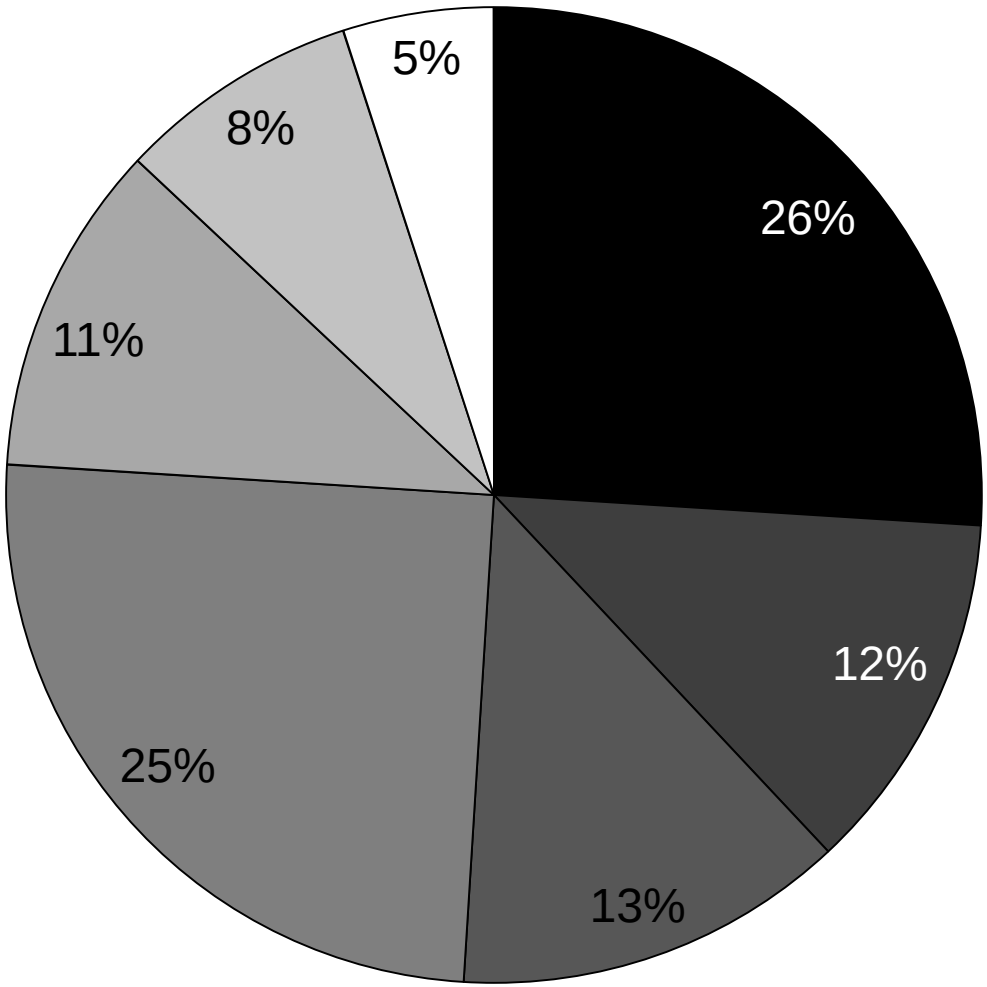
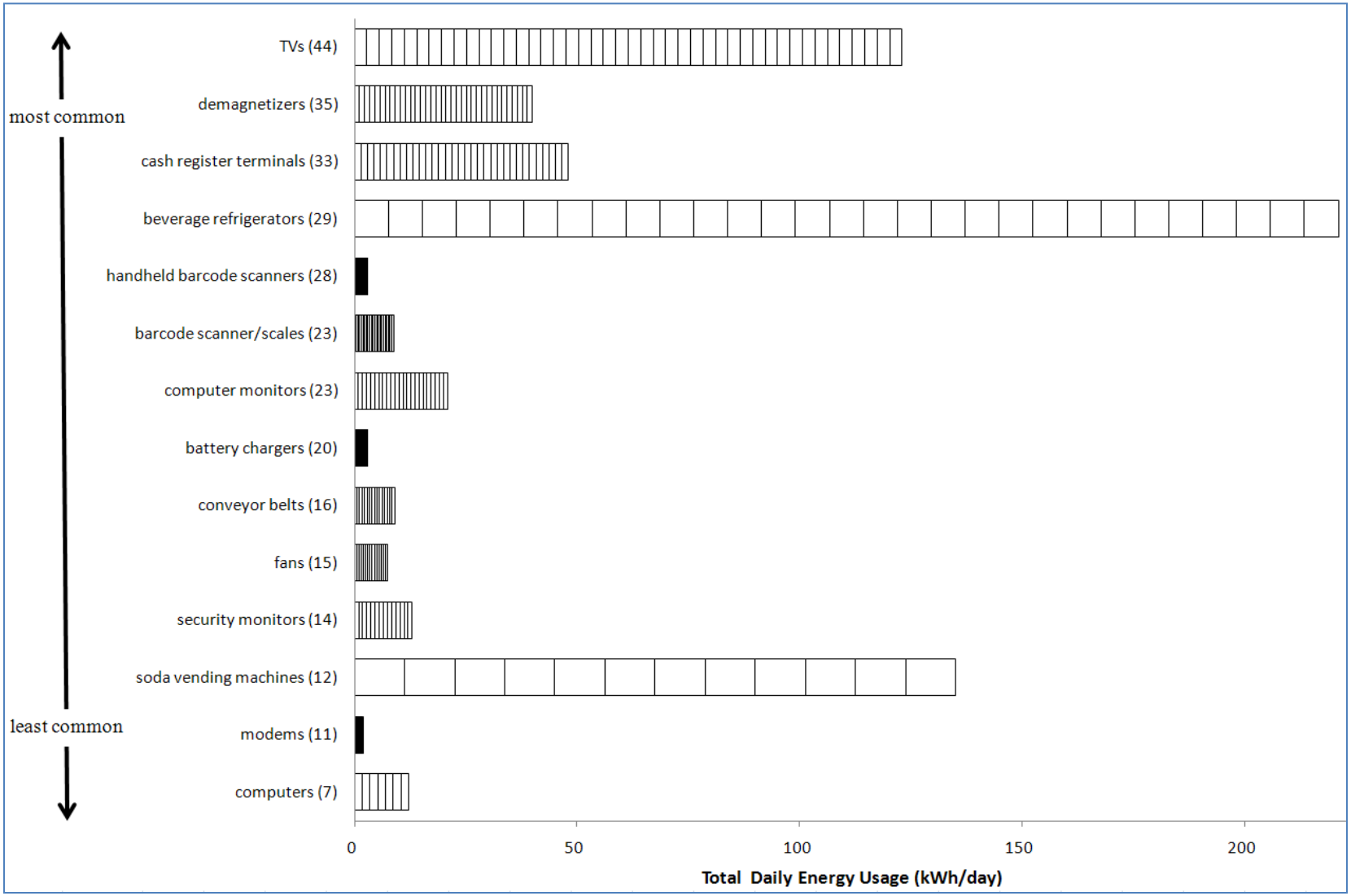
2020 Energy Goal – Next Frontier



2020 Energy Goal – Next Frontier



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Thank You

LEGRAND, NORTH AMERICA

2014

BETTER BUILDINGS SUMMIT

Steven Liu

May 8, 2014

WE ARE

POWER LIGHT & DATA

transforming the spaces where people live & work.

WE ARE

$6.0 Billion **2012 Revenue**

30,0000 people united
in the belief that together,
we can do things better

a public company

in 180 countries

WE ARE

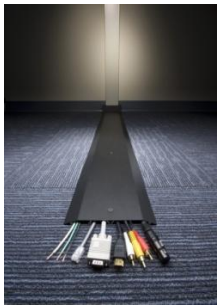
the North American division

the largest division of Legrand

over 2,600 employees

WE ARE

category experts

WIRING DEVICES

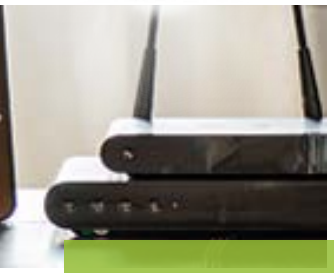
WIRE & CABLE MANAGEMENT

LIGHTING CONTROLS

DATA COMMUNICATIONS

COMMERCIAL A/V

HOME SYSTEMS




170,000 products

95 product categories

WORLD LEADER IN SWITCHES & OUTLETS

Sample of Customers

Our 2011 Commitment

Reduce corporate-wide energy intensity by 25% over ten years

- Deploy an “implementation model” - a replicable method to accelerate achievement of energy efficiency gains
- Report regularly to DOE on progress toward goals
- Provide specific strategies and actionable tools that other organizations can adopt

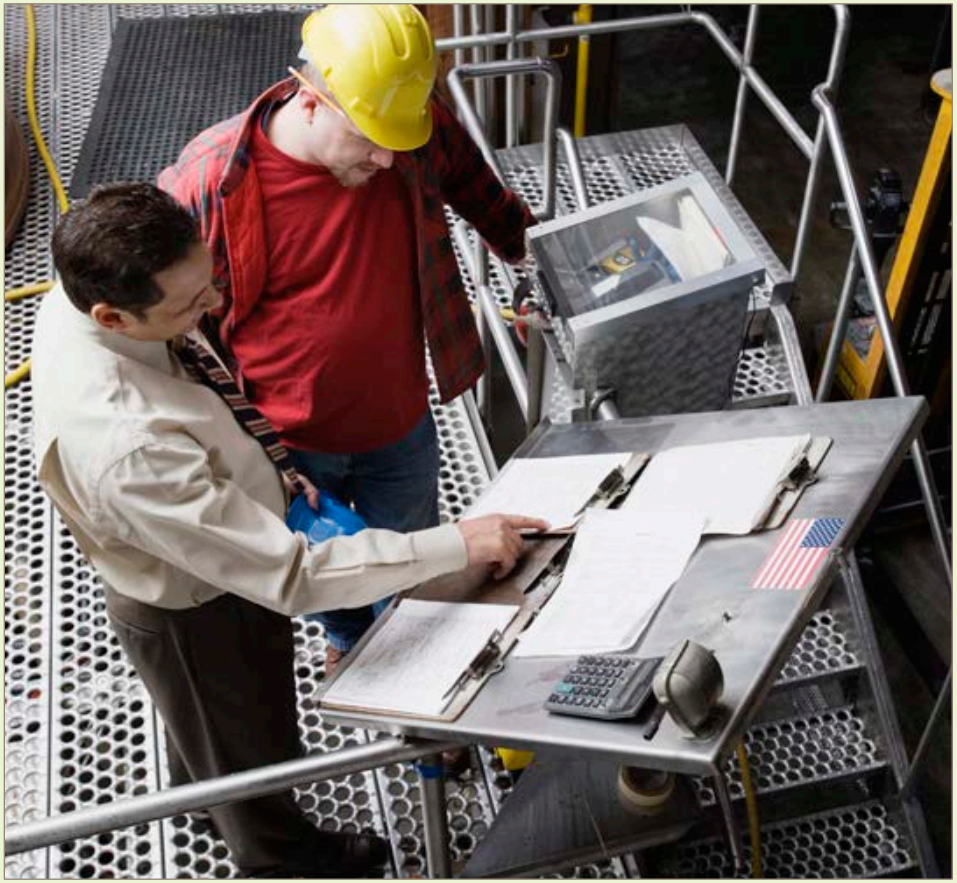
Reduce energy intensity by 10% over two years

- Implement a “Showcase” project at a single site that will achieve a 10% energy intensity reduction in just two years: West Hartford, Connecticut

“Accepting the Better Building, Better Plant Challenge reflects our commitment to constantly improve environmentally sustainable business and manufacturing practices - and to employing strategies that enhance our economic competitiveness."

John Selldorff, President and CEO of Legrand North America

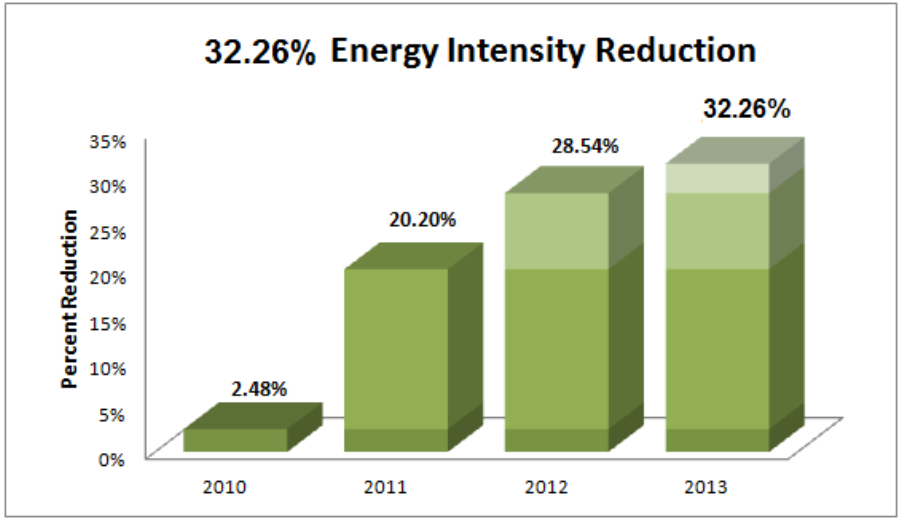
Why we took the challenge



Better Plants CHALLENGE
U.S. DEPARTMENT OF ENERGY

- **Makes good economic sense**
- **Reduces carbon emissions and other pollutants**
- **Reveals other operational efficiency opportunities**
- **Sharpens our understanding of customer energy challenges**
- **Sets a positive example for our employees and other businesses**

Getting Results



Goal: Reduce energy intensity by 10% in 2 years at our HQ

Result: Achieved!

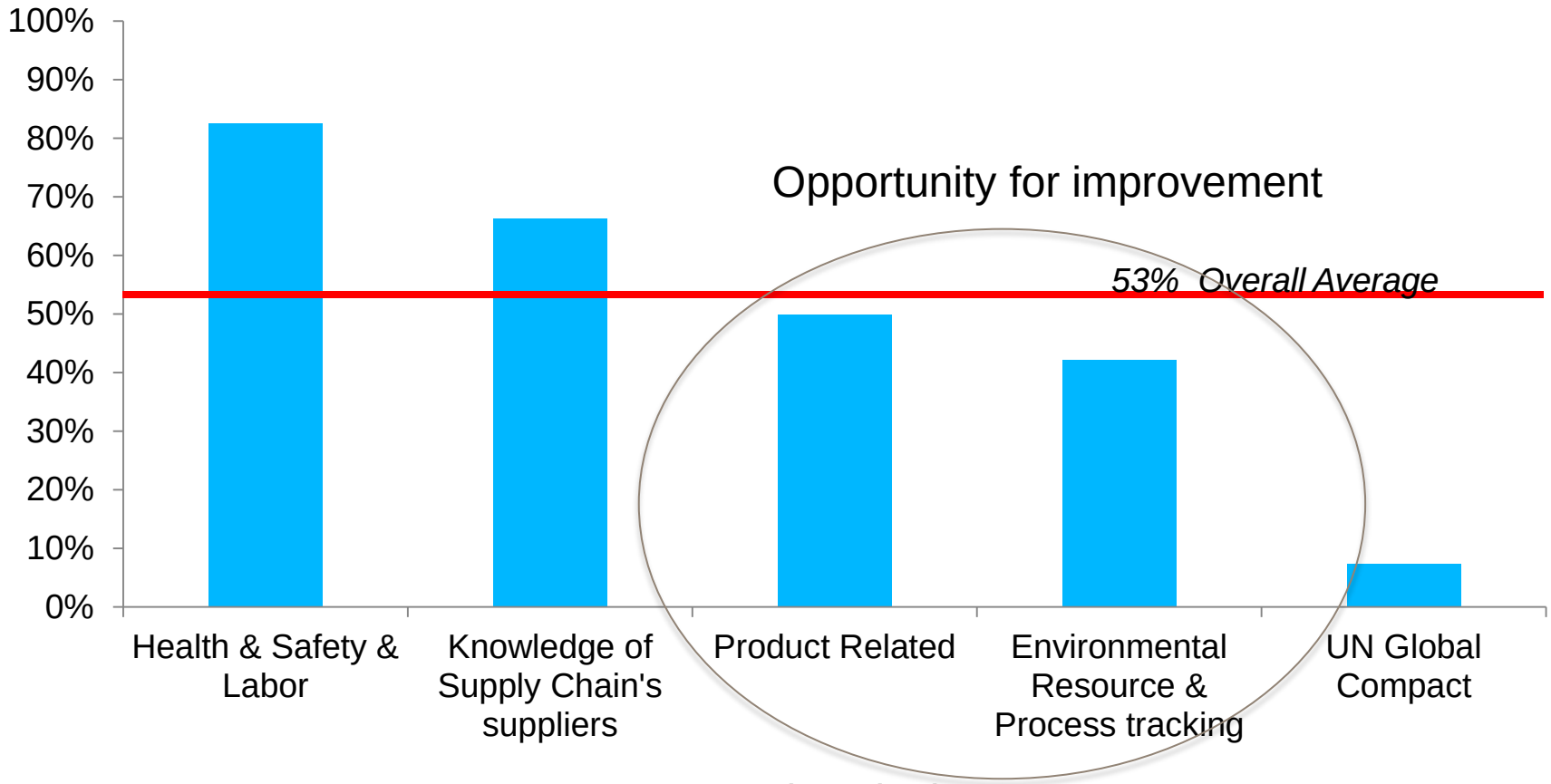
Goal: Reduce energy intensity across U.S. sites by 25% in 10 years

Result: Achieved! 32.26% in 4 years

Supplier Scorecard

- ✓Quality
- ✓Delivery
- ✓Responsiveness
- ✓Cost and Payment Terms
- ✓Sustainability

Supplier Sustainability Scorecard Results



Health & Safety & Labor
1. Emergency response exercise
2. Serious injuries/accidents
4. Human Trafficking

Knowledge of Supply Chain's suppliers
3. Process for evaluating business relationships
6. Location of suppliers
10. Purchasing Guidelines
11. Contents of purchasing guidelines

Product Related
5. Conflict Minerals
12. PEPs, REACH, RoHS, etc.

Environmental Process & Resource tracking:
8. ISO 14001
9. Measure & Goal of resources

UN Global Compact
7. Member

Opportunities and Challenges

Opportunities

Develop energy/waste water assessment tool

Engage with suppliers to identify improvement opportunities

Energy intensity improvement

Challenges

Resources

Expanding Better Plants to Suppliers

Typical Legrand supplier profile:

U.S. based

Privately owned

Manufacturer

Eager to improve energy usage/footprint

Resource-constrained

CHAPCO

COMPLETE Design & Packaging
www.completedesignpackaging.com

DureX

Giering METAL FINISHING, INC.

LYNAM

Magnetic Metals

Rowley Spring & Stamping Corp

SSS Precision Metal Stampings, Springs and Assemblies

Moving Forward

- 18 to 24 month journey
- Define metrics of energy intensity and measure improvements
- Supplier receives customer and DoE recognition
- Strengthen supplier relationship
- Evaluate next steps beyond 24 months

LEGRAND, NORTH AMERICA

2014

THANK YOU

steven.liu@legrand.us