



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



AAFES Energy Audit Program
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Army & Air Force Exchange Service

Agenda

- AAFES Mission/Vision
- AAFES Sustainability Goals
- Scope of AAFES Energy Audit Program
- Challenges
- Audit Status & Results
- Identified Energy Conservation Measures
- Identified Maintenance Efficiency Measure

**For 115 Years,
We've Been There!**



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Our Mission / Vision

General Order 46 (25 Jul 1895)

“...to supply the troops at reasonable prices with the articles of ordinary use, wear, and consumption, not supplied by the Government, and to afford them the means of rational recreation and amusement, using the Exchange profits to provide the means for improving the messes.”

- ✓ Provide quality merchandise and services at competitively low prices...
- ✓ And generate earnings to support Army Morale, Welfare and Recreation and Air Force Services Programs

Vision:

To be our customer's first choice

Global Retailer



\$10B Revenue

3100+ facilities

Proprietary Credit Card

Water and Bread Plants

Worldwide Logistics
Supply Chain

Catalogs

Online shopping

aafes.com
Click. Find. Save.

50 – US States – 19 May

5 – US Territories

30+ Countries

185 Main Stores

92 Contingency Stores

192 Shoppettes

Over 5,000
Services and vendors

1836 Specialty Stores

- Class Six
- Box Office Video
- Bookmark

772 Military
Clothing Stores



Sustainability - AAFES Summary



LED Upgrades



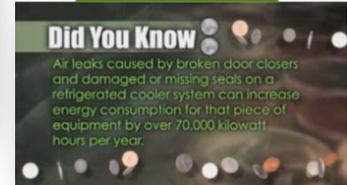
Energy Star Partner



Energy Star Vending Machines



CFL Policy



Energy Training



34 Projects Registered

**WORKING TOGETHER
TO MAKE A
DIFFERENCE**



AAFES Sustainability Brochure & Website



Earth Friendly Products



Recycling Programs



Greener Fleet



Green Bags



WATTS \$5 Million Savings



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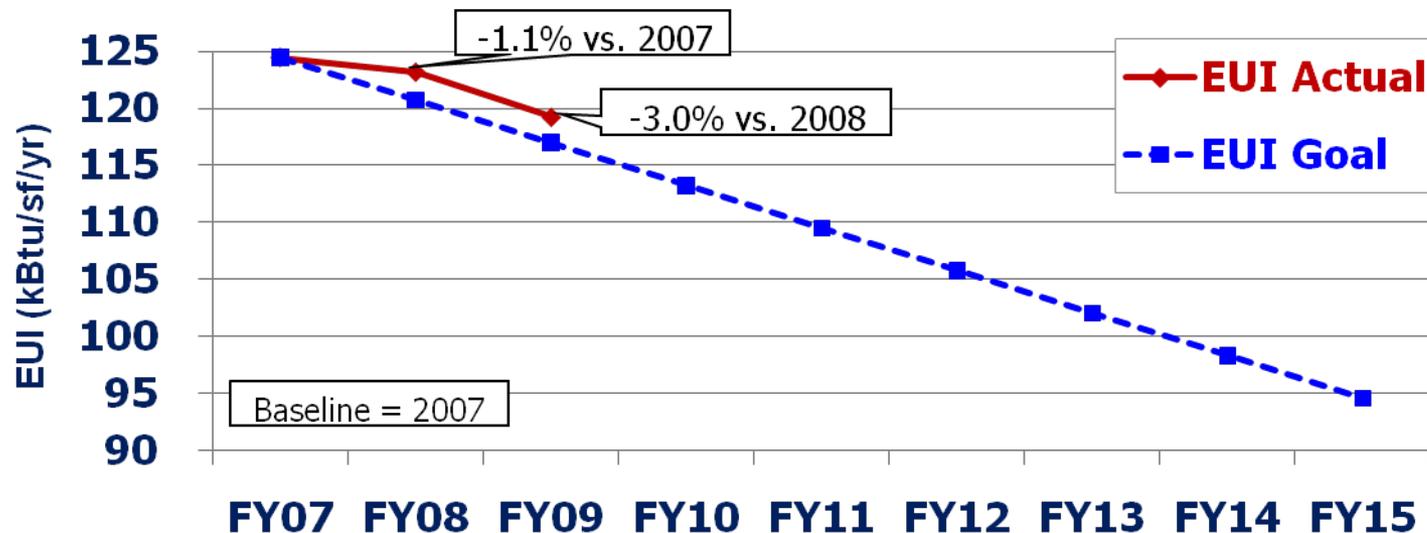
AAFES Sustainability Goals

- 1. Reduce Energy Consumption**
- 2. Reduce Water Consumption**
- 3. Reduce Waste**
- 4. Reduce Fleet Dependency on Fossil Fuels**
- 5. Increase Sustainable Buildings**
- 6. Increase Procurement, Marketing, Sales of Environmentally-Friendly Goods and Services**



AAFES Sustainability Goals

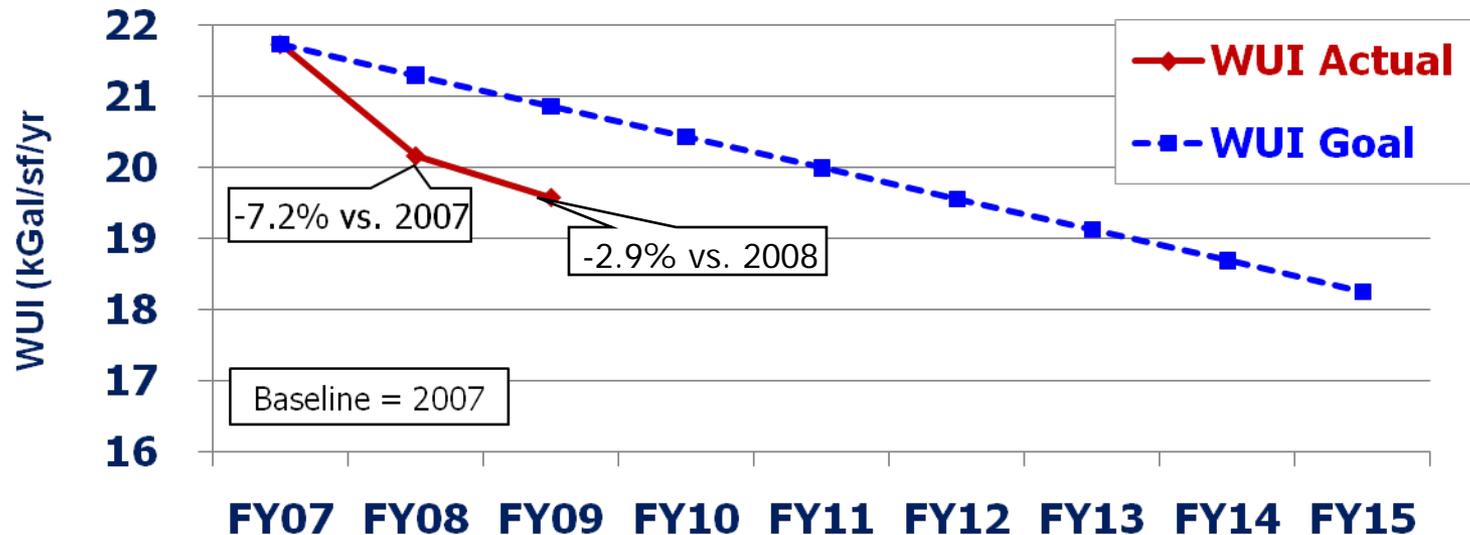
Reduce Energy Use Intensity (EUI) 3% Year-to-Year



* Energy data from 47% metered CONUS sites (Excludes LG and Data Center)

AAFES Sustainability Goals

Reduce Water Use Intensity (WUI) 2% Year-to-Year



* Water data from 42% metered CONUS sites (Excludes DCs and Data Center)

Challenges

- AAFES facility locations
- Number of AAFES facilities
- Variety of building types
- Complicated billing surveys
- Shared Ownership
 - Equipment ownership
 - Maintenance ownership

Meeting the Challenge

- Audit metered CONUS facilities first
- Utilize energy firms to conduct audits
- Perform “pilot” audits
 - Select “small” exchanges (<10 AAFES buildings)
 - Minimize travel
- Provide information for billing surveys
 - Pre-Interview Energy Manager
 - Air Force and Army Regulations
 - EOP 36-1 AAFES Energy Management Policy
 - Metering and billing details by building

Scope of AAFES Energy Audits

Goals

- Assess energy efficiency of metered AAFES facilities
- Recommend energy efficiency measures (< 5 year simple payback and ROI > 7%)
- Review and/or reconcile past utility billing data including data found in the AAFES utility tracking system
- Identify operations and maintenance efficiency opportunities

Energy Audit Selection Methodology

Selection Factors

- Energy Use Intensity (EUI) ranking
- Energy Cost Intensity (ECI) ranking
- Number of metered AAFES buildings
- New Construction & Renovation projects
- AAFES Region Exchange is located (engages all regions)

Energy Audit Status

Installations: FY2009-FY2010



• **Completed:** 17 Installations and 3 Distributions Centers

- Andrews AFB
- Ellsworth AFB
- Ft. Hamilton
- Ft. Stewart
- MacDill AFB
- Tinker AFB
- Waco DC (TX)
- Bolling AFB
- Ft. Benning
- Ft. McNair
- Goodfellow AFB
- Moody AFB
- USMA
- West Coast DC (CA)
- Dyess AFB
- Ft. Gordon
- Ft. Myer
- Hunter AAF
- Redstone Arsenal
- Dan Daniels DC (VA)

• **In-Progress:** 7 Installations

- Dover AFB
- Ft. Ord
- Tyndall AFB
- F.E. Warren AFB
- McConnell AFB
- Ft. Huachuca
- Presidio of Monterey

Site Visit & Final Report

- AAFES staff kickoff meeting/interview
- CE/DPW staff kickoff meeting/interview
- Utility metering survey (incl. CT verification)
- Energy efficiency survey (by building)
- Shutdown/startup performance survey
- Out-brief
- Detailed final report



Energy Audit Results

Energy Conservations Measures (ECMs) Identified:

ECM	Number	Annual Savings
No-Cost	56	\$162k
Low-Cost	75	\$1.09M
Total	131	\$1.25M

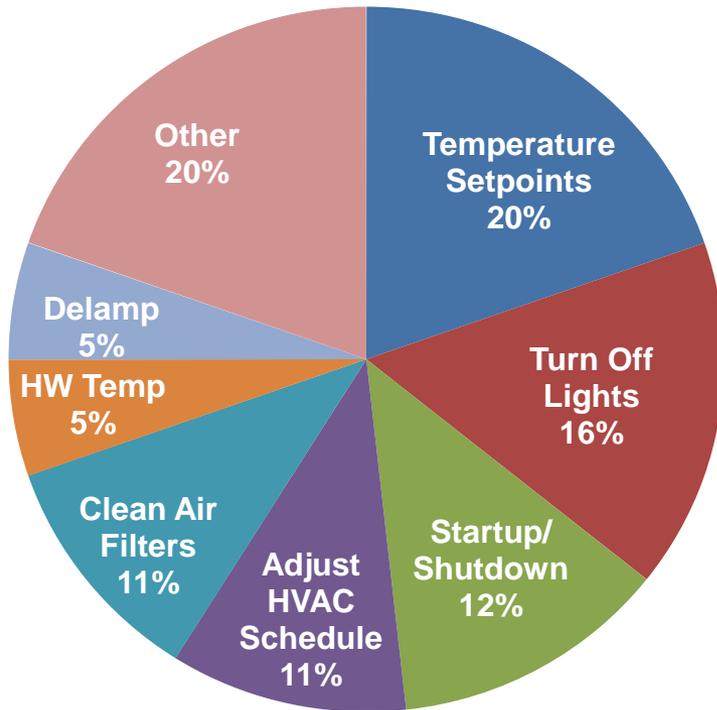
Maintenance Efficiency Opportunities Identified:

Maintenance Opportunities	Number
AAFES	108*
Real Property	135
Total	243*

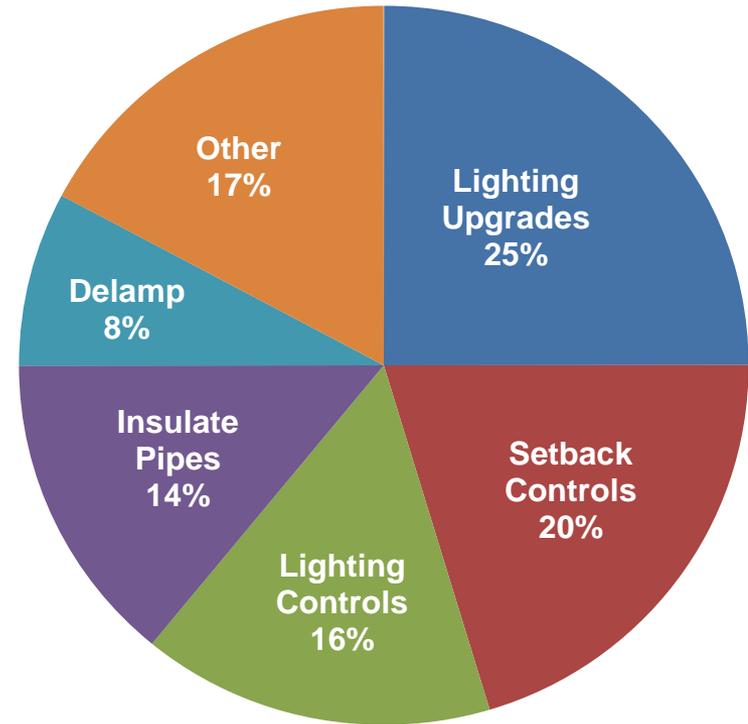
* AAFES Distribution Centers not included

Energy Conservation Measures

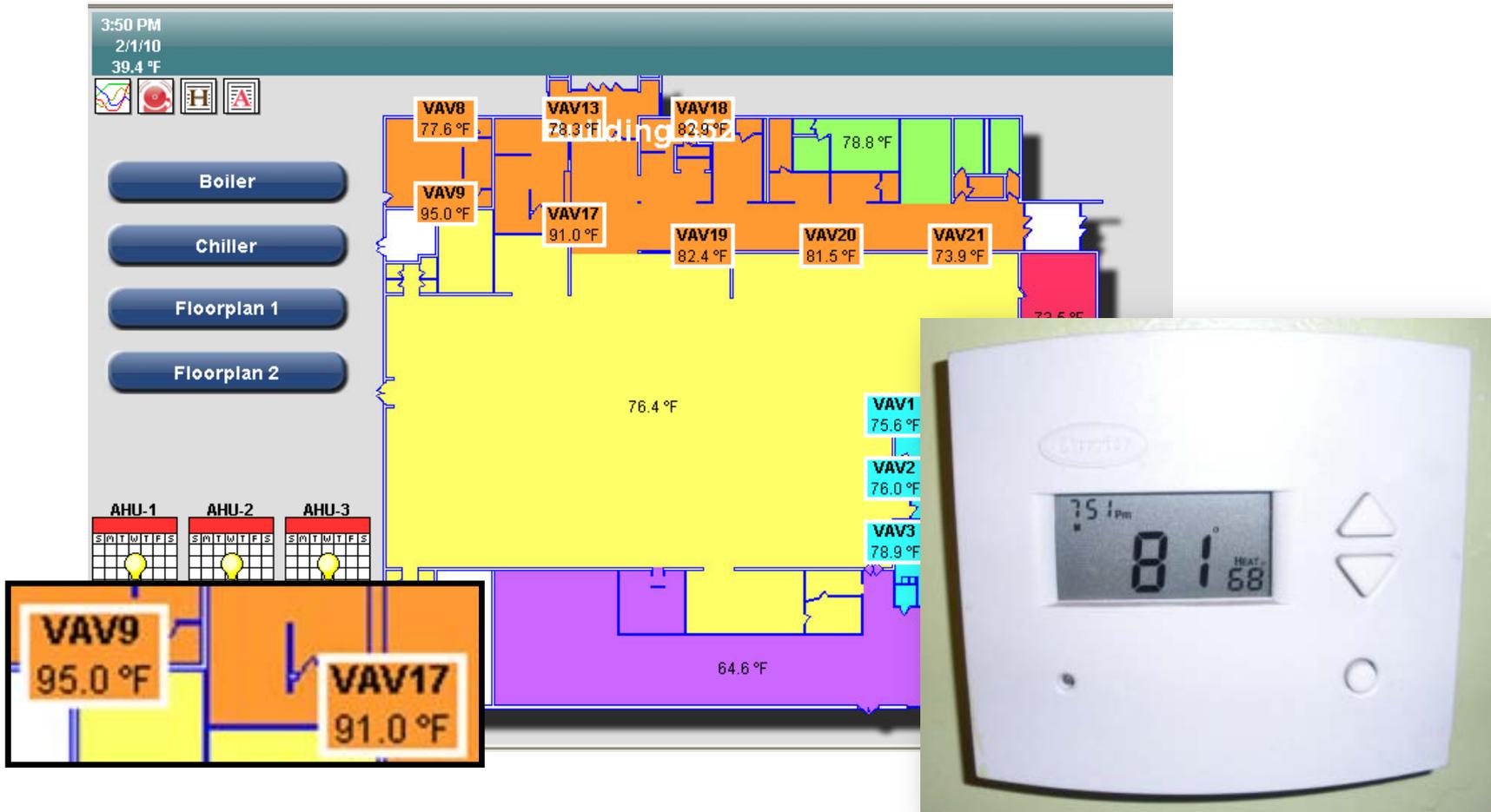
No-Cost ECMs



Low-Cost ECMs

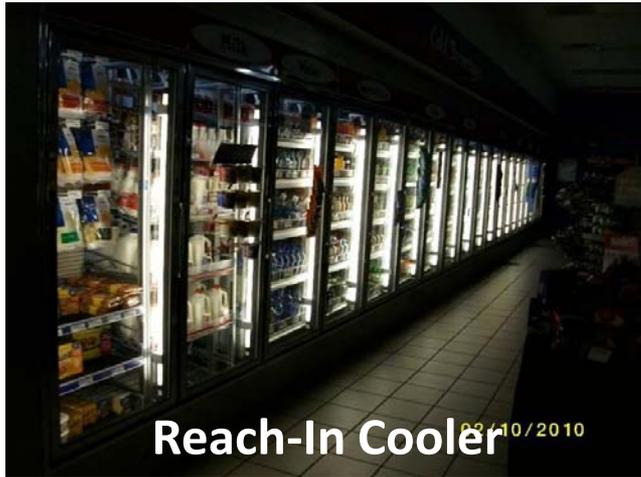


No-Cost Energy Conservation Measures



Set Space Temperatures to AAFES Standard

No-Cost Energy Conservation Measures



Turn Off Lights



No-Cost Energy Conservation Measures



**Optimize Food Equipment
Startup**



**Optimize Food Equipment
Shutdown**

No-Cost Energy Conservation Measures



Turn Off Refrigeration on Display Refrigerators & Freezers



Reduce Compressed Air Pressure Setting

Low-Cost Energy Conservation Measures



**Install T8 Lamps and
Electronic Ballasts**

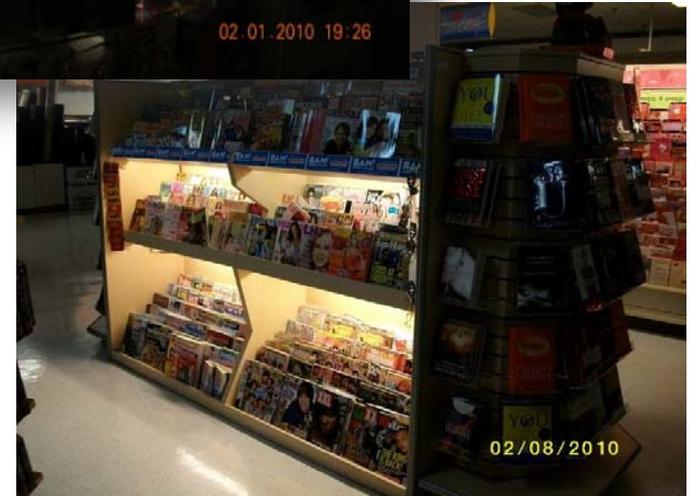


**Reduce Lighting Levels
(Delamp)**

Low-Cost Energy Conservation Measures



Replace Incandescent Lamps w/ CFLs



Install Timers on Display Case Lights

Low-Cost Energy Conservation Measures



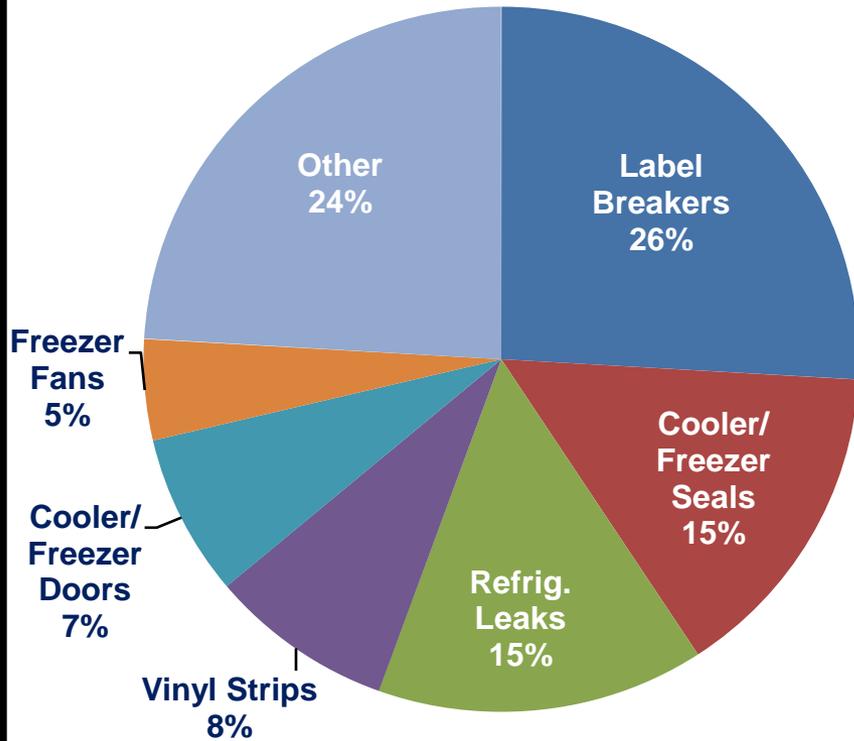
**Install Programmable
Thermostats**



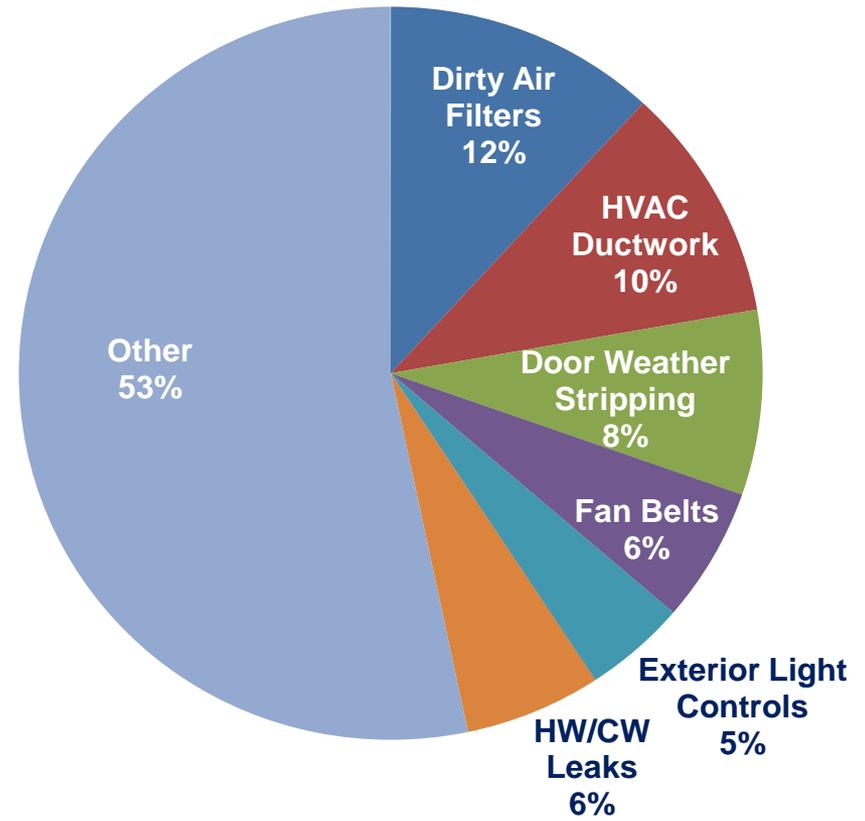
Insulate Hot Water Pipes

Maintenance Opportunities

AAFES

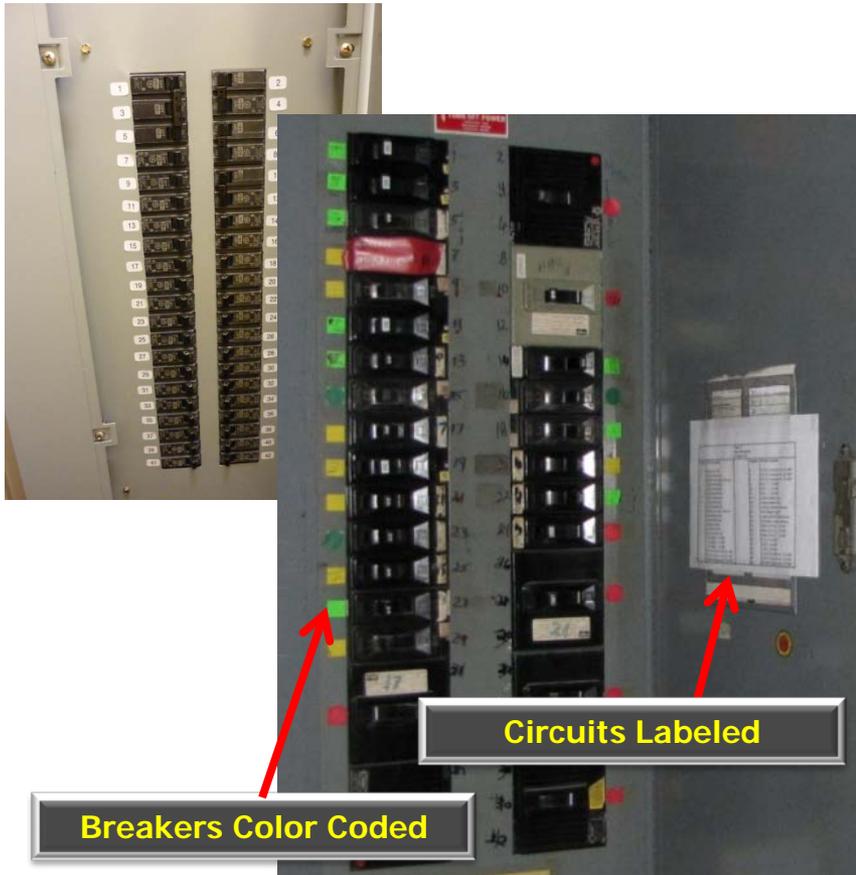


Real Property



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AAFES Maintenance Opportunities



**Lighting Controls:
Breakers Not Labeled**



**Reach-In Cases:
Ice Build-up on Seals**

AAFES Maintenance Opportunities



**Refrigeration Condenser:
Ice-Build Up on Lines**



**Walk-In Freezer:
Missing Vinyl Door Strips**

AAFES Maintenance Opportunities



**Reach-In Cooler Door:
Broken Hinge**



**Walk-In Cooler/Freezer
Evaporator:
Ice Build-Up on Fan**

Real Property Maintenance Opportunities



**HVAC:
Dirty Air Filter**



**AHU Outside Air Ductwork:
Repair/Replace Insulation**

Real Property Maintenance Opportunities



**AHU OA/RA Dampers:
Disconnected Actuator and
Control Damper**



**Air Handling Unit:
Loose Fan Belt**

Real Property Maintenance Opportunities



**A/C Condenser Unit:
Missing Insulation**



**Exterior Lights:
Malfunctioning Photocell**

Real Property Maintenance Opportunities



**Exterior Doors:
Missing Door Sweeps**



**Door Heater:
Operating w/ Door Closed**

Future Outlook

- Energy evaluations of 25% of metered facilities (EO 13423)
- Streamline process
- Collect OCONUS facility metering data
- Continue tracking ECM & Maintenance implementation
- Identify more capital intensive projects

In Summary:

Over two years, 20 audits have been conducted, 131 ECMs with potential savings of \$1.25M identified, and 243 maintenance opportunities documented.