



# Department of Defense Facilities Energy Use, Strategies and Goals

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# DoD Asset Management Strategy

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- **Comprehensive Approach**
  - Defense Infrastructure Strategic Plan
  - Infrastructure Investment Management Strategy
- **Tools**
  - Conservation and Demand Reduction
    - Facility Energy Audits – Metering/Benchmarking
    - Energy Conservation Investment Program (ECIP)
    - Energy Savings Performance Contracts (ESPCs),
    - Utility Energy Services Contracts (UESCs)
    - Enhanced Use Lease (EUL) / Power Purchase Agreements (PPA)
  - Renewable/Alternative Technologies
    - Wind/Solar/Geothermal/Biomass/Ocean/Hydrogen
  - Sustainable Design/Development Practices (High Performance bldgs)
  - Sustainable Infrastructure and Utilities Privatization
  - Awareness Programs
  - Coordinated Research and Development

# OSD Energy Policy

## Initiatives Actions

Utility Privatization

- Issue guidance
- Demonstrate benefits
- High % of success
- Technology (better data)
- Right people involved

Embrace Sustainable Design

- LCC Analysis
- W B Design Guide

Enhance recognition

- Showcase facilities
- Awards
- Training

Implement meter policy

- Benchmarking
- Accuracy in accounting/billing
- Energy Star Buildings

Implement appropriate Distributive Energy Resources

Pursue energy funding

- Congressional appropriations
- Private sector investments

Increase efficiency products use

- Energy Star
- Alternative fuels

Promote renewable energy

- Purchases
- Self-generated

## Strategies

Utility Privatization

- Align efforts
- Ensure proficiency
- Execute efficiently and effectively

Transition from utility privatization to utility mgmt.

Implement conservation measures and reduce cost

Achieve/increase energy awareness

Improve Energy Efficiency

- Development
- Investment

Expand use of renewable energy

## Goals

Complete utility privatization

Bring all systems to C2 level

Meter energy consumption at all facilities

Sound stewardship/management of systems

Reduce energy consumption

Reduce greenhouse gases

Increase use and production of renewable energy

## Grand Challenges

Modernize infrastructure

Increase utility and energy conservation and demand reduction

Improve energy security, flexibility and reliability

## Mission

Ensure that the DoD utility infrastructure is secure, safe, reliable and efficient, that energy and Water commodities are procured effectively and efficiently, and that the components maximize energy and water conservation efforts.

## Vision

**100 % reliability of utility services to the Warfighter**



# DoD Real Property (2008)

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- 545,714 Facilities
  - 316,238 Buildings
  - 181,591 Structures
  - 47,885 Linear Structures
- 29.8 million acres of Land
- 536 Installations
  - 5,429 DoD Sites

Data source: Base Structure Report (BSR) FY 2008

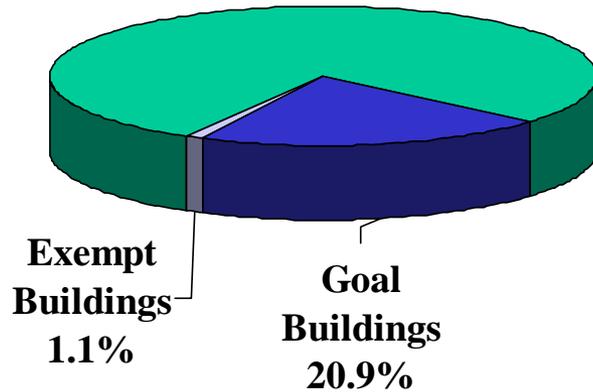


# FY08 DoD Energy Use

Total Site-delivered Energy (BTU)

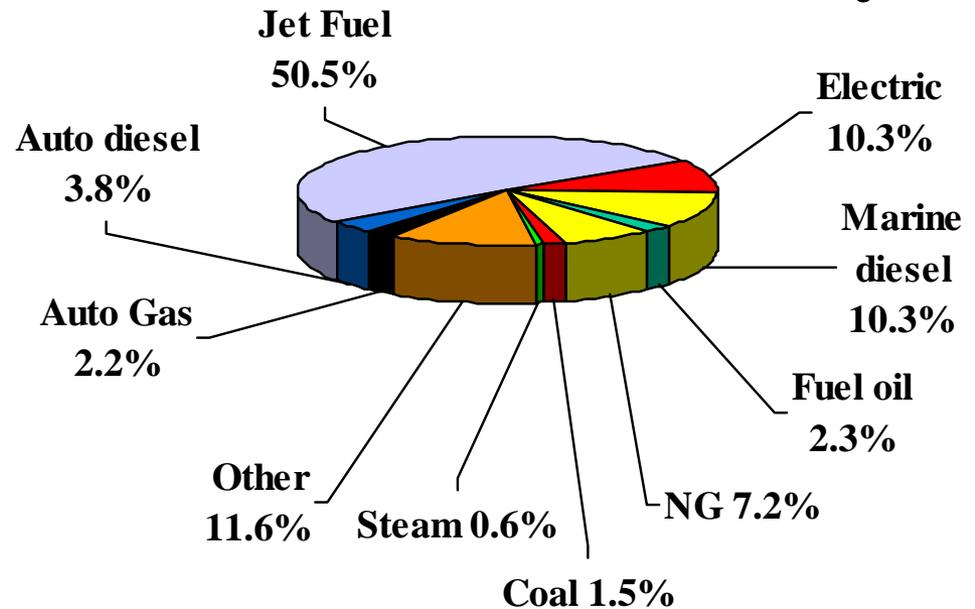
## Application

Non-Facilities  
78.0%



**Nation's single largest energy user**  
(Used 0.8% of total U.S. & 78.6% of Federal energy in FY 2006)

## Commodity



**\$20.0B**

**989 Trillion BTU**



# FY 2008 Metrics and Performance (Facilities)

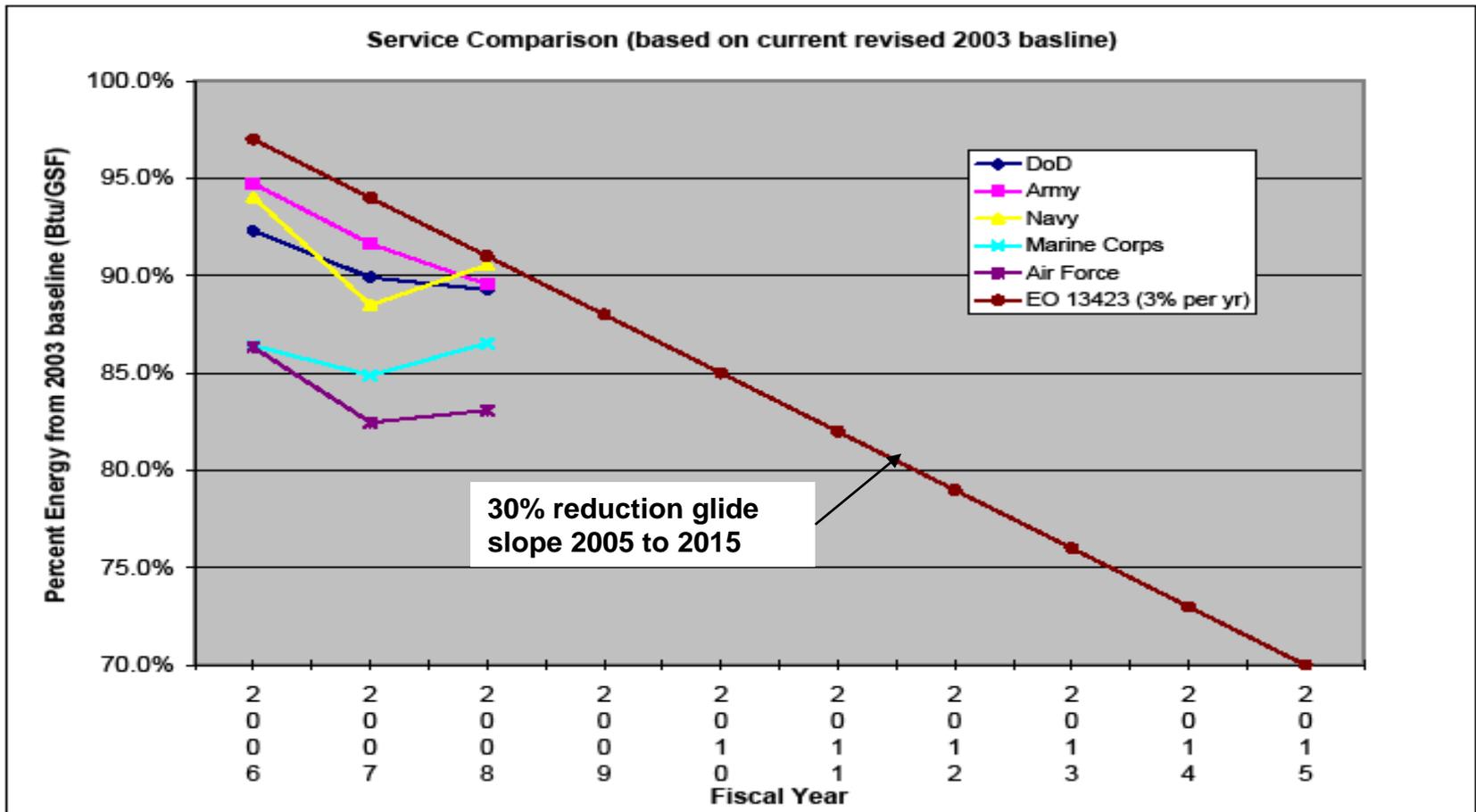
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- Facility energy goals (EPAct 2005 and EO 13423 combined)
  - Reduce goal facility consumption 3% per year -  
**10.7%** : 9% for 2008: Goal continues to 30% in 2015
  - Purchase/generate 2.5% renewable energy -  
**2.9%** : 3% for 2008: Goal continues to 7.5% in 2013
  - Water intensity reduction 2% per year –  
**2.9%** : 2% for 2008; Goal continues to 16% in 2015  
Set baseline in 2007 of 59.8 gallons / GSF
  - Percentage of electricity metered by (100% by 2012) -  
45.8% standard, 13.8% advanced, 59.6% total
  - Percentage of new designs 30% better than ASHRAE –  
**93%** of FY 2010 MILCON program: Goal is 100%
  - Produce or procure 25% renewable energy by 2025  
**9.8%** on track to exceed goal

**DoD is doing well but there is still much work to do!**



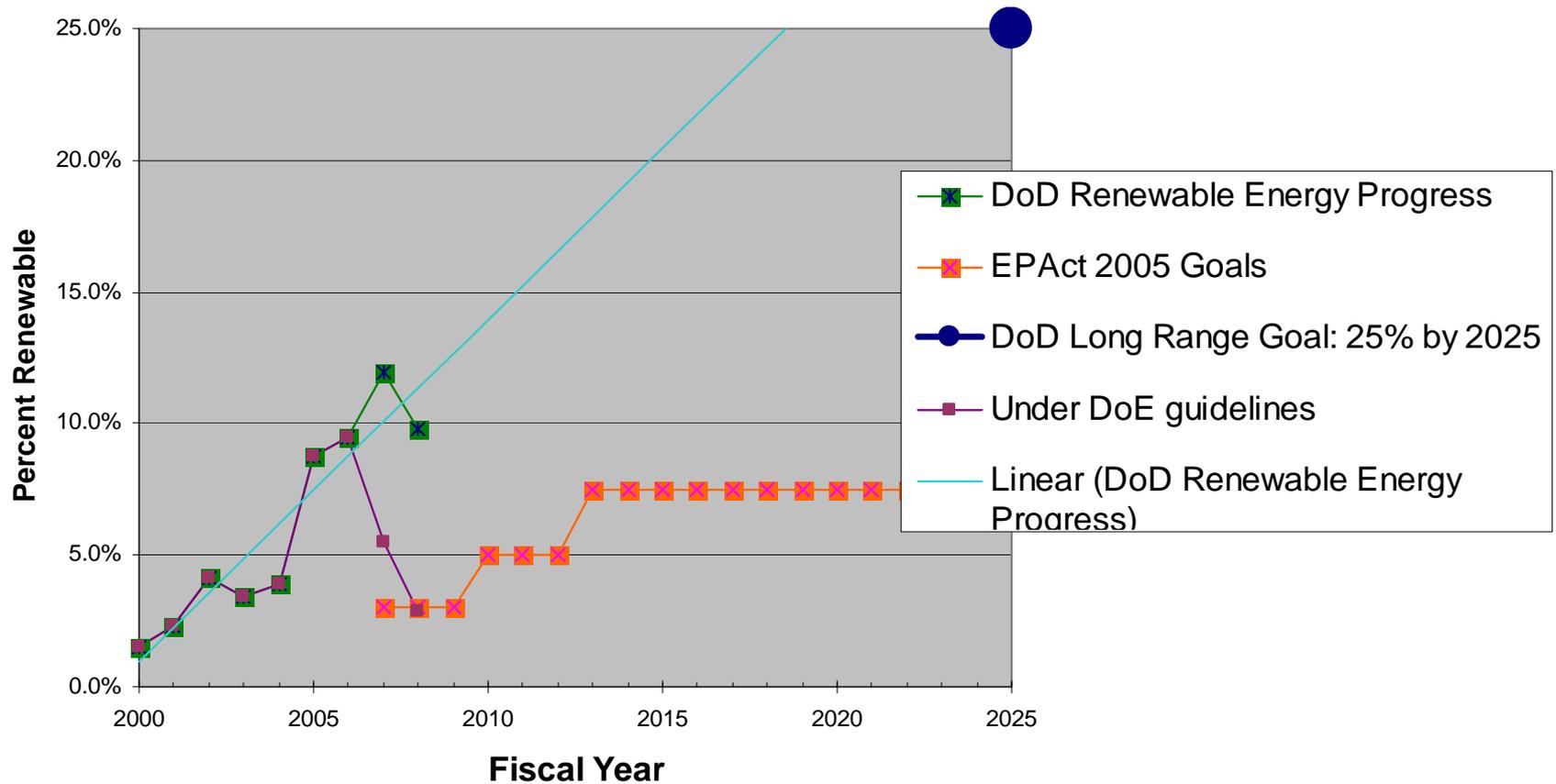
# DoD Facility Energy Intensity





# DoD Renewable Energy Progress

## DoD Renewable Energy Progress





# Current OSD Focus

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- **Metering and Commercial Benchmarks**
- **Strategic Investment Plan**
  - Priorities for funding matched with best opportunities
  - ECIP \$70M in FY 2008, increased to \$120M in FY 2013
- **Increase use of Alternative Financing Contracts**
- **Increased implementation of renewable energy**
  - FY 2008 ECIP: \$28.2M renewable projects (23); FY 2009 \$41.8M (27)
- **Comprehensive approach**
  - Mobility/transportation energy
  - Sustainable Design Templates
- **Partnership with DoE on Net Zero Energy Installations**
- **Develop a DoD Installation Energy Security Strategy**

**Expand Renewable Energy Sources -- Improve Energy Security**



# ARRA “Stimulus Bill” 2009

## American Recovery and Reinvestment Act

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- ARRA 2009 ECIP \$88.1M renewable projects (34)
  - PV
  - Solar Thermal
  - Wind
  - Biomass
- ARRA 2009 “Energy” projects
  - 1415 SR&M projects: \$1,055M
  - 267 Roofing projects: \$451M
- ARRA 2009 RDT&E
  - \$300M total (Weapons systems and supply and distribution)
  - \$13.5M facility energy auditing software, tactical HVAC systems, whole-building energy modeling, and renewable energy building integration modeling



# Way Forward

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- DoD Installation Energy Security Strategy – being developed
- Renewable Energy goal is 25% by 2025
- We must “place a value” on the cost of energy security
  - It is more than an insurance policy that reduces energy risk
- We will craft a business approach that places DoD at the forefront of alternative / renewable energy leadership while balancing our stewardship responsibilities for national security, environmental security, energy security and economic security

*We can do our part to “turn off” the lights and save energy ... but we must “turn on” the brilliance that is American ingenuity and create national energy security!*



# Join Us at Our Next Energy Training Workshop and Trade Show

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Dallas, TX  
August 15-18, 2009



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