



U.S. Department of Energy
**Energy Efficiency
and Renewable Energy**

Bringing you a prosperous future where energy
is clean, abundant, reliable, and affordable

Federal Energy Management Program

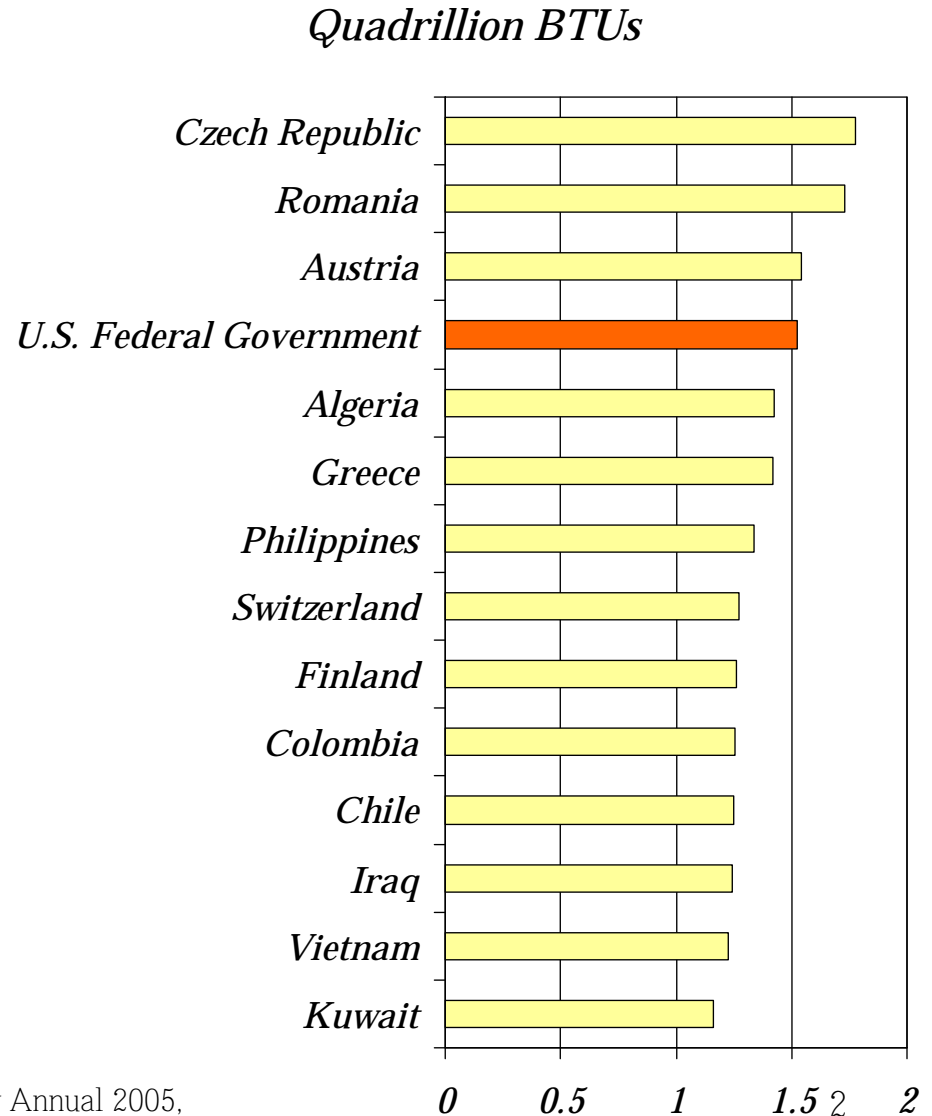
*U.S. Department of Energy's Federal
Energy Management Program (FEMP)*

Federal Remediation Technologies Roundtable
December 11, 2008

Matt Gray



- Federal energy management
 - Lead by example
 - Help transform the market
 - Demonstrate and deploy new technologies
- Requires carrot and stick approach
- Need involvement of senior management
- US public sector represents about 14% of GDP, which is about average worldwide



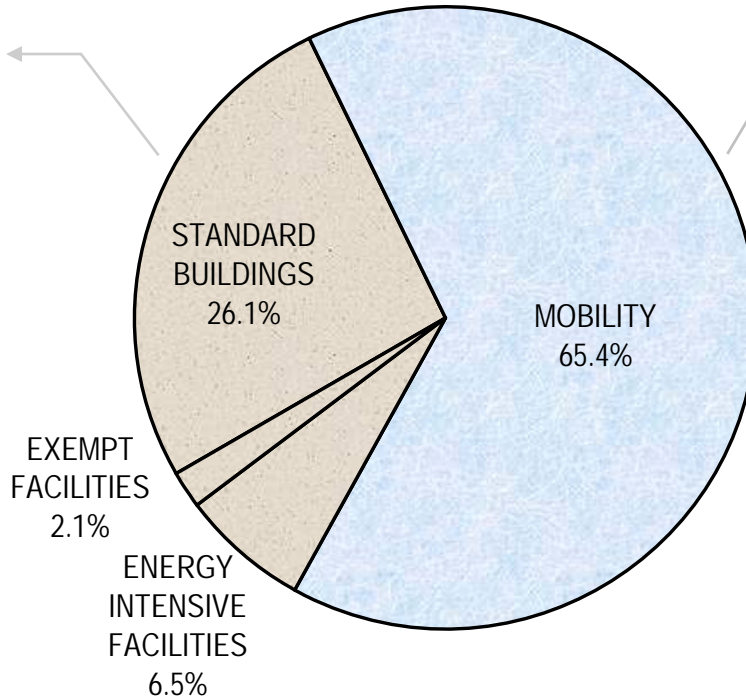
Source: Energy Information Administration International Energy Annual 2005, Table E.1 World Primary Energy Consumption and Federal energy consumption for 2006.



US Federal Footprint

Building Energy Usage by Type:*
Electricity = **45%**
Natural Gas = **34%**
Fuel Oil = 9%
Coal = 5%
Other = 7%

**The Federal Government operates over 500,000 facilities!*



Mobility Energy Usage by Type:
Jet Fuel = **66%**
Navy Special = 23%
Auto Gas = 6%
Diesel = 4%
Other = 1%

The Federal Government consumes **1.6%** of the Nation's total energy budget, or **\$17.4 billion** in annual energy costs



The Federal Energy Management Program strives to enhance energy security, environmental stewardship, and cost reduction within the federal government by:

Facilities

- Advancing energy efficiency and water conservation;
- Promoting the use of renewable energy, sustainable building design, and distributed energy resources;
- Improving utility management decisions; and

Fleets

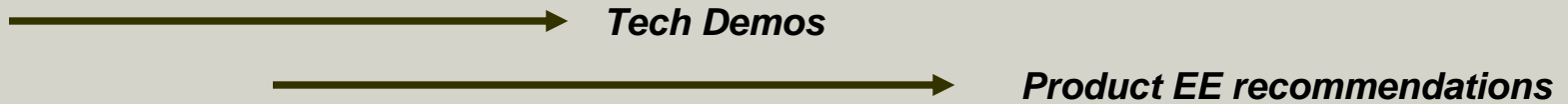
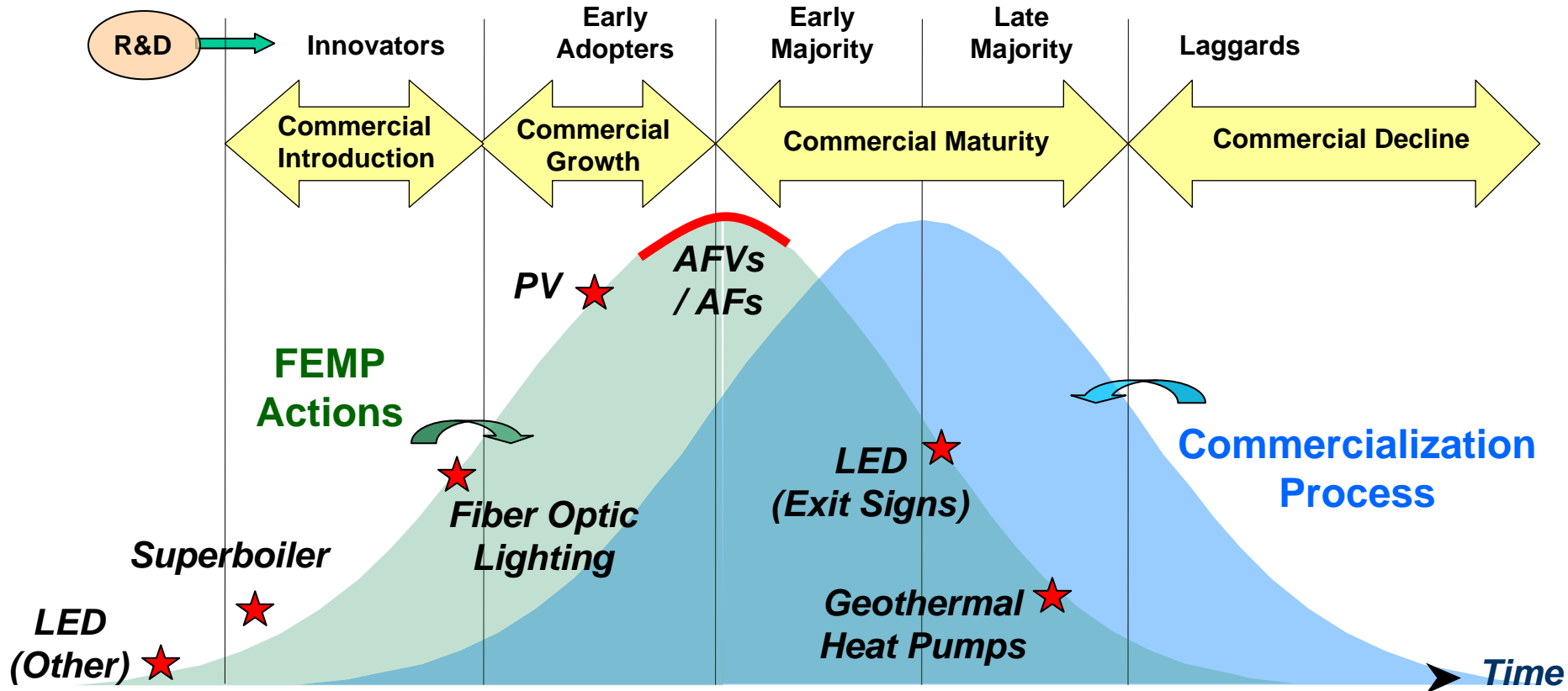
- Promoting the advancement of alternative fuels and advance technology vehicles;
- Improving fleet efficiency measures to reduce and displace petroleum fuels in fleets; and
- Facilitating, monitoring, and evaluating progress of all covered agencies.



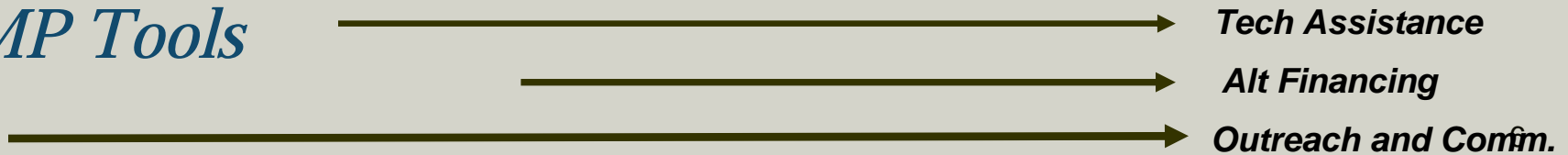
- EPact 2005 set new baselines for Federal agencies in energy and water conservation, renewable energy use
- Executive Order 13423 set even higher goals for Federal agencies to achieve
 - Improve energy efficiency and reduce greenhouse gases by 3% annually or 30% by 2015 (2003 baseline)
 - Reduce water usage by 2% per year through 2015 (2007 baseline)
 - Reduce fleet petroleum consumption by 2% annually, and increase non-petroleum fuels by 10% annually through 2015 (2005 baseline).
 - Ensure at least 15 percent of building inventory incorporates requirements described in the Guiding Principles & Sustainable Buildings MOU.
 - Requires sustainable practices in acquisitions



FEMP Market Transformation



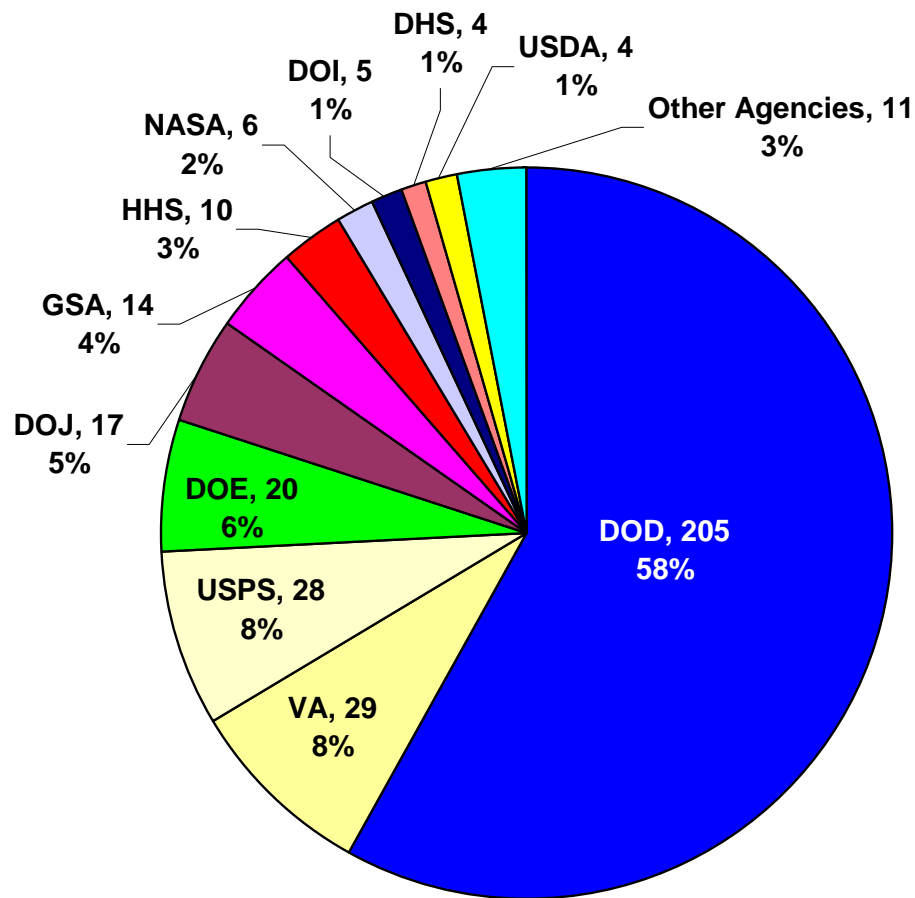
FEMP Tools





Facility Building Consumption by Agency

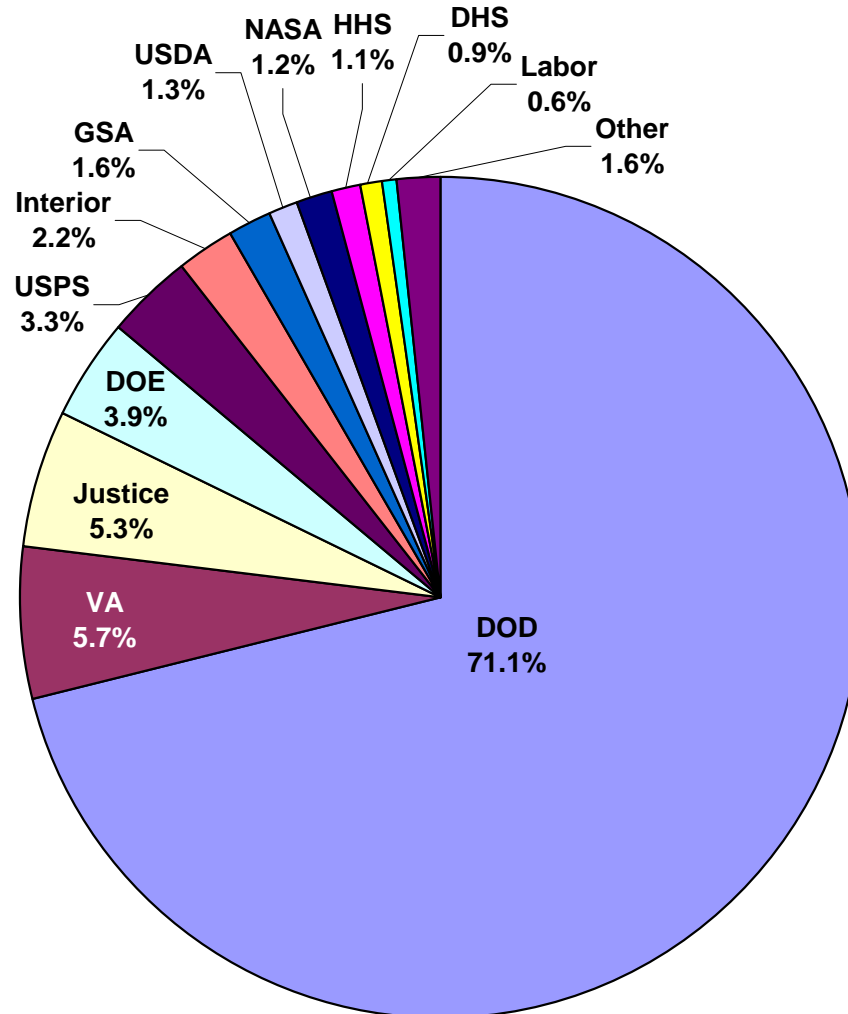
**FY 2007 Annual Consumption in Facilities Subject to the EO/EISA Goal:
353.5 Trillion Btu**





Water Consumption by Agency

FY 2007 Water Consumption in Facilities: 164 Billion Gallons (\$536 million)





Secretary Bodman DOE TEAM Announcement

“The TEAM Initiative will allow the Department of Energy to be an example among the federal agencies, to serve as an energy efficiency leader for the entire federal government”

- Secretary Samuel W. Bodman, August 6, 2007



- **WHY?** Because the core mission and responsibility of the Department of Energy is to lead the nation in promoting and utilizing the best available energy management technologies and practices.
 - Federal government is the largest single energy user in the U.S. and DOE is the second largest energy consumer of all civilian federal agencies



TEAM Executive Summary

- **WHO:** “Center of Excellence” A dedicated team comprised of procurement, engineering, legal, and project management experts.
- **WHAT:** Executable Plans. Binding agreements that ensure the agency will meet, exceed and lead in the implementation of these goals.
- **WHERE:** To begin, the top 20 DOE energy consuming sites including national labs. Thereafter, all remaining sites.
- **WHEN:** Executable agreements finalized by the end of 2008.
- **HOW :** Through the execution of an “Order of Operations” designed to optimize department resources and third party financing.

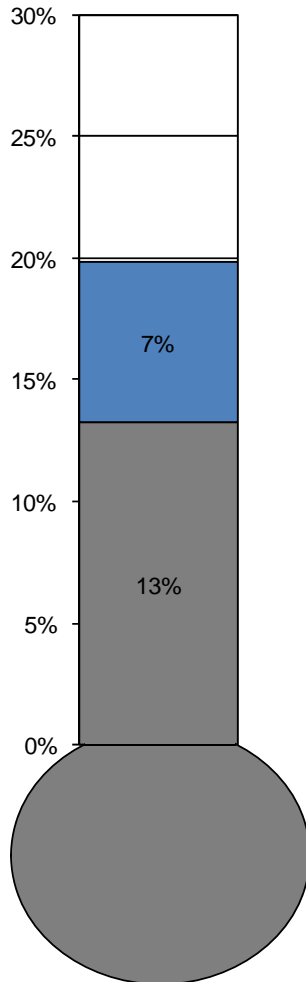


DOE will strive to meet, exceed and/or lead in the Federal implementation of Executive Order 13423 and EPACT 2005

<i>EPACT 2005 and Executive Order 13423 Goals</i>	<i>Meet</i>	<i>Exceed</i>	<i>Lead</i>
1. Increased Energy Efficiency	✓	✓	✓
2. Renewable Energy Generation and Use	✓	✓	✓
3. Petroleum Reduction/Alternative Fuel Use (Fleets)	✓	✓	✓
4. Sustainable Building Standards	✓	✓	
5. Water Conservation	✓		
6. Sustainable Environmental Practices in Acquisitions	✓		
7. Reduction in Toxic and Hazardous Material Use/Solid Waste Diversion/Recycling	✓		
8. Electronics Stewardship	✓		



TEAM Impact - Efficiency



TEAM Energy Intensity Reduction Progress

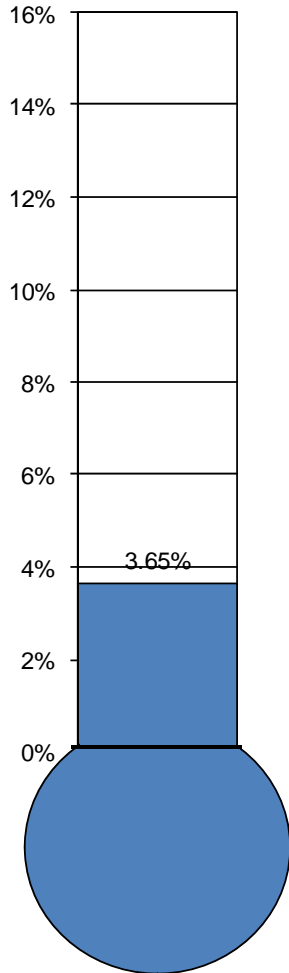
Goal: 30% energy intensity reduction by 2015 from 2003 baseline

TEAM estimates and 2003-2007 energy savings of all sites as of 07/31/08

In the span of 1 year, TEAM has proposed energy savings that is more than half of what it took 4 years to accomplish

Major savings measures

- Decentralization of steam distribution
- HVAC controls and equipment upgrade
- Lighting and lighting control
- Boiler and chiller upgrades



TEAM Water Intensity Reduction Progress

Goal: 16% water consumption reduction by 2015, from 2007 baseline

TEAM Estimates as of 07/31/08

- Major savings measures
- Wastewater reclamation
- Water saving plumbing fixtures
- Redistribution of steam lines and leak repair
- Elimination of once-through cooling



Thank You!

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US Department of Energy

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For more information, visit the FEMP website at:

<http://www1.eere.energy.gov/femp/>