

DOE Sustainability and Climate Resilience

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Our Natural Environment is Changing and We Must Adapt



Executive Order 13514:

Federal Leadership in Environmental, Energy, and Economic Performance

October 5, 2009



Official White House Photo by Pete Souza

*“By the authority vested in me as President by the Constitution and the laws of the United States of America, **and to establish an integrated strategy towards sustainability in the Federal Government** and to make reduction of greenhouse gas emissions a priority for Federal agencies, it is hereby ordered...”*

Federal Government Background

- Occupies nearly 500,000 buildings
- Operates more than 600,000 vehicles
- Employs more than 1.8 million civilians
- Purchases more than \$500 billion per year in goods and services



DOE: A Major Landlord and Employer

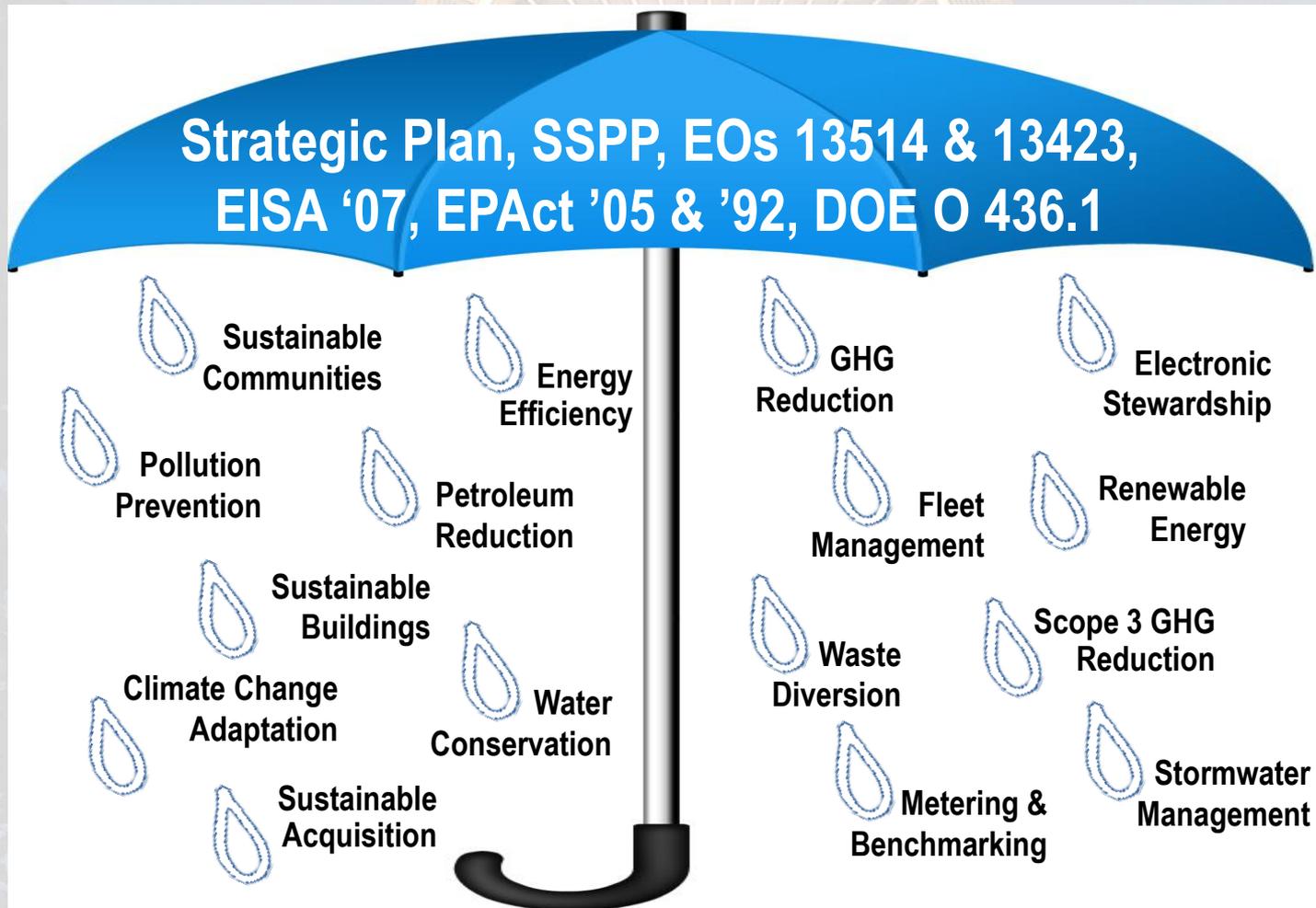
- Occupies more than 19,000 facilities
- Operates nearly 16,000 vehicles
- Employs more than 127,000 people
- Purchases more than \$20 billion per year in goods and services



Sustainability at DOE

- DOE 2011 Strategic Plan
 - Transforming our Energy Systems
 - Leading the National Conversation on Energy
 - **Make the Federal Government a Leader in Sustainability**
 - Management and Operational Excellence
 - Achieving Operational and Technical Excellence
 - **Leverage Infrastructure to Support the Mission**
- DOE Order 436.1, “Departmental Sustainability”
- DOE Strategic Sustainability Performance Plan
 - DOE Climate Adaptation Plan (Under Development)

Sustainability Strategic Context



Strategic Sustainability Performance Plan (SSPP)

- Annual sustainability plan required by EO 13514
- The DOE SSPP integrates EOs, statutes, and requirements, with goals for:
 - Greenhouse gas (GHG) reductions and annual GHG inventory
 - Green Building and Regional and Local Planning
 - Energy and Water Conservation
 - Pollution Prevention and Sustainable Acquisition
 - Electronic Stewardship and Data Centers
 - ***Climate Change Adaptation Plan****

*New requirement for 2012

DOE Site Sustainability Plans

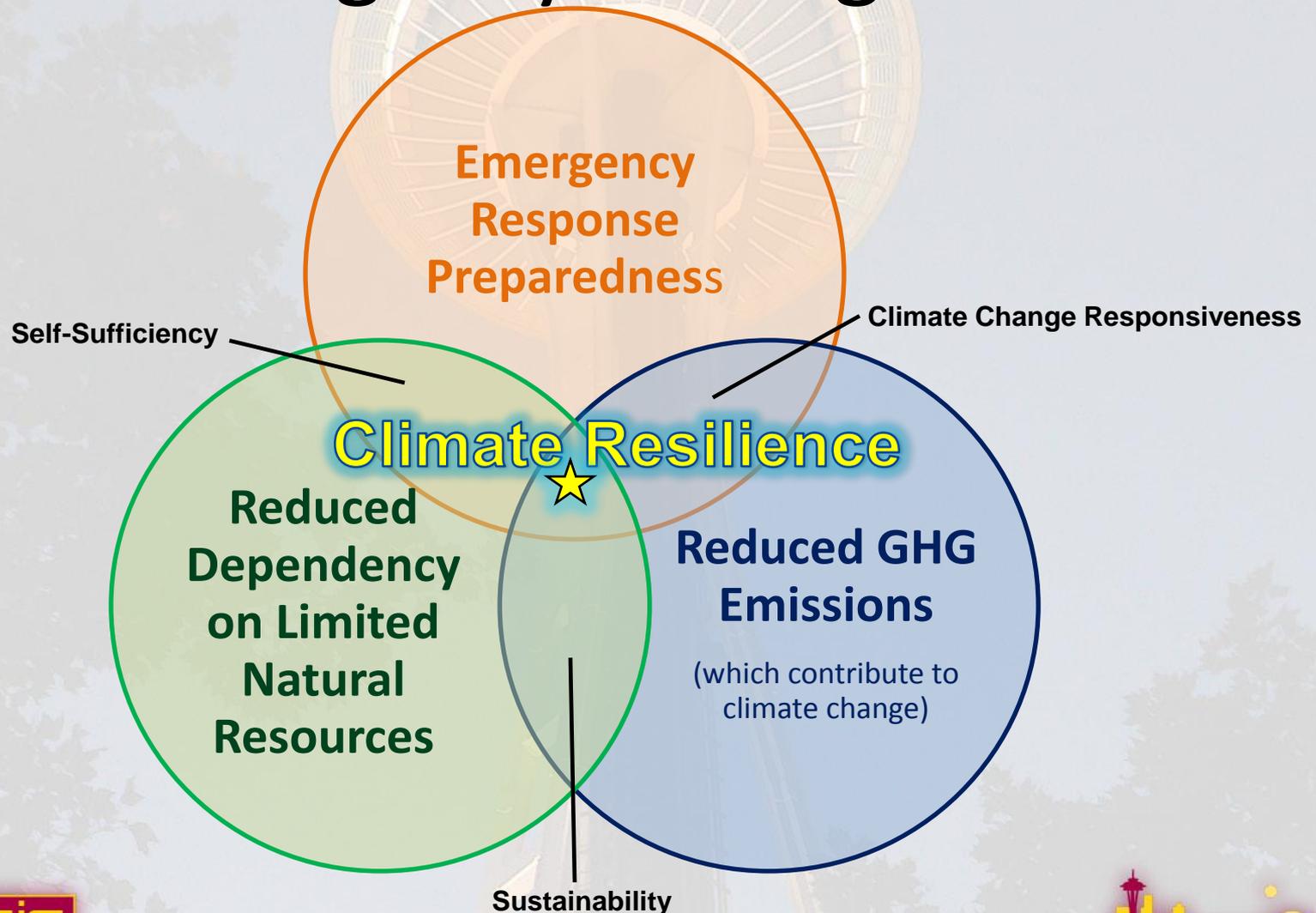
- Include annual performance data and a narrative
- Narratives provide information on:
 - Major sustainability initiatives or changes to mission/facilities
 - Current and projected future performance
 - Best practices, lessons learned, and success stories
 - Site innovations to support sustainability goals
 - ***Climate Change Adaptation and Resiliency Efforts****

*New requirement for 2012

Adaptation Requirements

- EO 13514 requires:
 - An Interagency Task Force to report Federal progress and recommend approaches for climate adaptation
 - The Council on Environmental Quality (CEQ) and agencies to implement recommendations
- Federal agency requirements:
 - Policy Statement
 - Vulnerability Assessment
 - FY 2012 Priority Actions
 - Annual Adaptation Plan

Sustainability, Climate Adaptation & Emergency Management



Climate Adaptation Planning at DOE

- Secretary Chu issued a Climate Change Adaptation Policy Statement in June 2011

http://www1.eere.energy.gov/sustainability/pdfs/doestatement_ccadaptationpolicy.pdf

- Associate Deputy Secretary Melvin Williams was designated as the responsible Senior Official
- Established the DOE Climate Adaptation Planning Working Group:
 - Meets monthly to discuss issues and develop deliverables
 - Conducted DOE's high level vulnerability analysis
 - Identified Priority Actions for FY 2012

Climate Change Vulnerability Analysis Findings

- **Exposure:** DOE will be exposed to diverse effects of climate change at facilities in every major U.S. climate region
- **Sensitivity:** Potential impacts and opportunities include:
 - Disrupted or more expensive operations due to increased temperature and water/energy shortages, more frequent wildfires, floods, or severe weather events
 - Workforce issues due to heat, health, quality of life, and cost of living
 - New opportunities to enhance U.S. climate change resilience
- **Adaptive Capacity:**
 - DOE has expertise within existing policies and operations
 - Additional integration will help ensure climate resilience

FY 2012 Priority Actions

- **Exposure**
 - Develop an initial DOE strategy for obtaining science and modeling information needed for planning
- **Sensitivity**
 - Conduct high level U.S. energy infrastructure vulnerability assessment and gap analysis
 - Identify near-term opportunities for DOE to contribute to energy supply sector climate resiliency
- **Adaptive Capacity**
 - Review Directives, Guides, and Standards for emergency response planning to ensure natural phenomena hazards are addressed
 - Update training materials for climate change

2012 Climate Change Adaptation Plan

- Submitted to the U.S. Council on Environmental Quality (CEQ) in June
 - Appendix to the 2012 DOE SSPP
- Initial DOE plan, containing:
 - High level planning goals and objectives
 - Actions to better understand and address DOE climate change risks and opportunities
 - Updated annually

How Can You Support DOE?

- Support sustainability efforts and engage with colleagues
- Consider climate change when updating emergency response documents
 - *Are you planning for the right sort of natural hazards given climate change projections?*
- Participate in the DOE Climate Change Adaptation Planning Working Group
- Submit your thoughts and ideas:
sustainability@hq.doe.gov

Contact Information and References

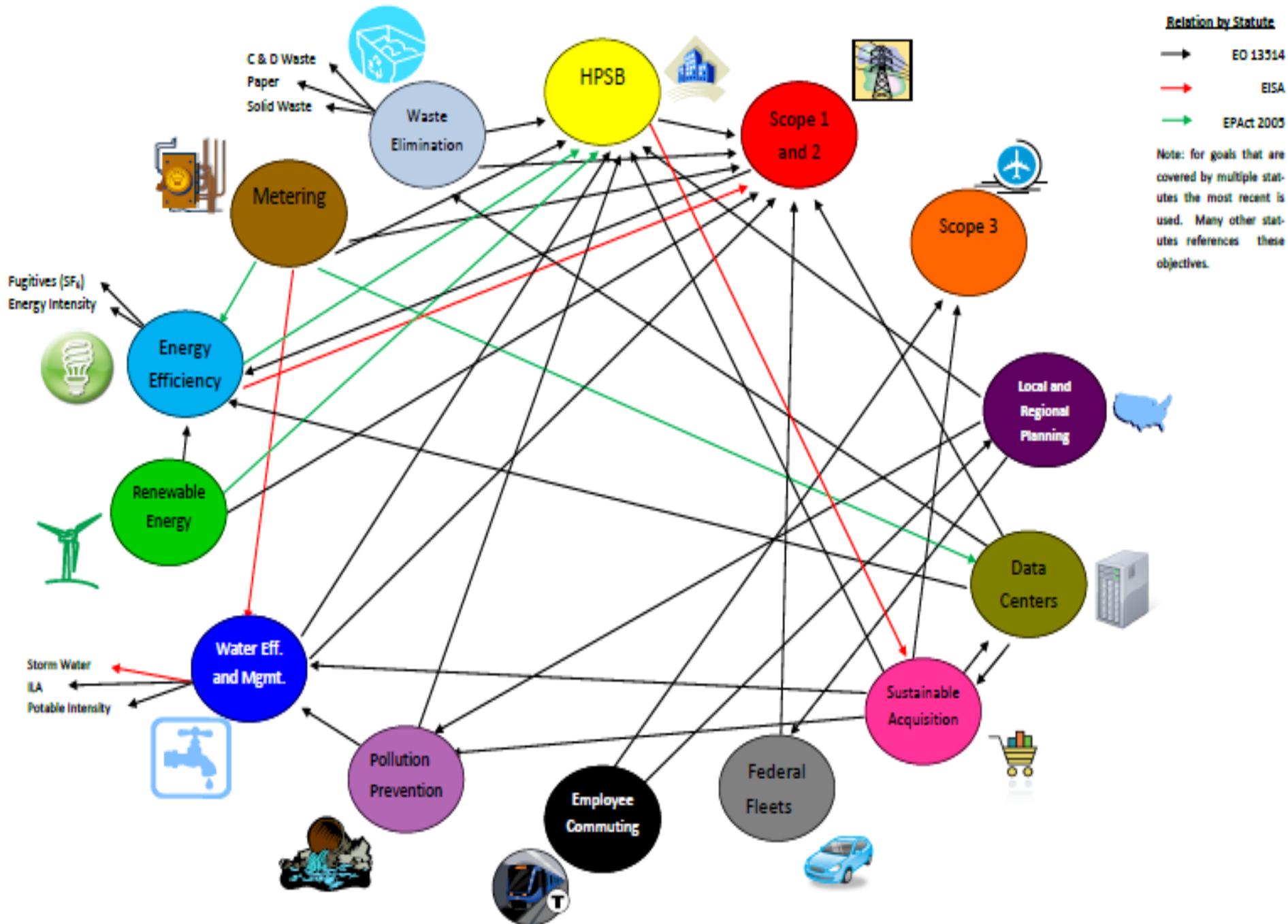
- **EO 13514:**
http://www.whitehouse.gov/assets/documents/2009fedleader_eo_rel.pdf
- **Federal Climate Change Adaptation:**
<http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation>
- **DOE SSPP:**
http://www1.eere.energy.gov/sustainability/pdfs/doe_sspp_2011.pdf
- **Sustainability Performance Office:**
<http://www.sustainability.energy.gov>
- **US Global Change Research Program:**
<http://globalchange.gov/>
- **Contact:**
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BACK-UP SLIDES

Interconnected Goals

- DOE has over a dozen main sustainability goals mandated by statute and Executive Order
- Investment in one goal can reap rewards in other goals
- Goals are not silos but are more like a web
- Sustainability Web places focus on interconnected goals

SUSTAINABILITY WEB



DOE Order 436.1

- Requires implementation of:
 - Strategic Sustainability Performance Plan (SSPP)
 - Site Sustainability Plans (SSPs)
 - Environmental Management Systems (EMSs)
- Streamlines the Department's approach to implementing:
 - EO 13514
 - EO 13423
 - EAct 1992 and 2005
 - EISA 2007
 - Contractor Requirements Document (CRD)

DOE Requirement Targets

<u>Sustainability Goals</u>	<u>Requirement</u>
Greenhouse Gas Emission Scopes 1 and 2 Reduction	28% (2020)
Greenhouse Gas Emission Scope 3 Reduction	13% (2020)
Energy Intensity Reduction (Btu/ft ²)	30% (2003 – 2015)
Renewable Electricity Consumption Increase	7.5% (2013 forward)
Fleet Petroleum Reduction	30% (2005 – 2020)
Fleet Alternative Fuel Increase	10% (2005 – 2015)
Fleet Inventory Reduction	35% (2005 – 2014)
Potable Water Intensity Reduction (gal/ft ²)	26% (2007 – 2020)
Industrial/Other Water Consumption Reduction	20% (2010 – 2020)
Recycling & Waste Diversion	50% (by 2015)
Procurements Meet Sustainability Requirements	95% (each year)
Buildings Meet Guiding Principles	15% (by 2015)
Net-Zero Energy in New Facilities	100% (by 2030)

FY 2010 DOE Sustainability Scorecard

	<p>Scope 1&2 GHG Emission Reduction Target</p> <p>Submitted comprehensive inventory as 2008 baseline for Scope 1&2 GHG Reduction Target of 28% by 2020¹</p>	<p>Score: GREEN</p>
	<p>Scope 3 GHG Emission Reduction Target</p> <p>Submitted comprehensive inventory as 2008 baseline for Scope 3 GHG Reduction Target of 13% by 2020¹</p>	<p>Score: GREEN</p>
	<p>Reduction in Energy Intensity</p> <p>Reduction in energy intensity in goal-subject facilities compared with 2003: 22.7% and on track for 30% by 2015</p>	<p>Score: GREEN</p>
	<p>Use of Renewable Energy</p> <p>Use of renewable energy as a percent of facility electricity use: Total of 9.2% from renewable electricity sources including at least 2.5% from new sources (thermal, mechanical, or electric).</p>	<p>Score: GREEN</p>
	<p>Reduction in Potable Water Intensity</p> <p>Reduction in potable water intensity compared with 2007: 12.1% and on track for 26% in 2020</p>	<p>Score: GREEN</p>
	<p>Reduction in Fleet Petroleum Use</p> <p>Reduction in fleet petroleum use compared to 2005: 5.2% and not on track</p>	<p>Score: RED</p>
	<p>Green Buildings</p> <p>Sustainable green buildings: 1.20% of buildings sustainable 2.35% GSF of inventory sustainable</p>	<p>Score: RED</p>