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A River of Energy Solutions

Keeping Your Head Above Water in
the River of Federal Mandates

Chris Tremper – DOE FEMP

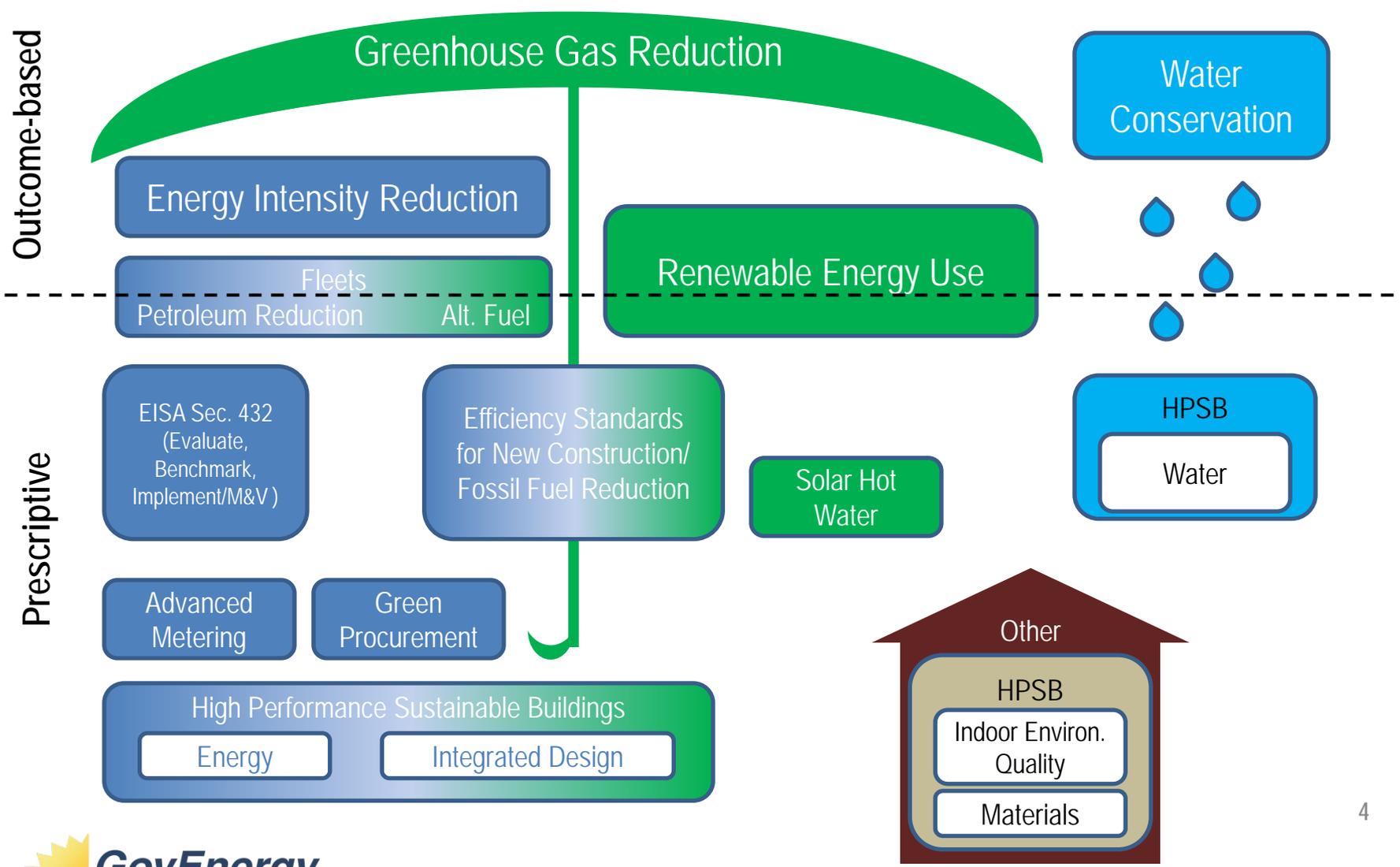
Federal Energy/Sustainability Mandates

- Part 1: Chris Tremper, FEMP
 - GHG Emission Reductions
 - Energy Intensity
 - Renewable Energy
 - Section 432 of the Energy Independence and Security Act
 - High Performance Sustainable Buildings
 - Procurement
 - Fleet
- Part 2: Bill Sandusky, PNNL
 - Metering
 - Water Conservation
 - New Construction/Major Renovation
 - Fossil Fuel Reduction

The Drivers

- Executive Order 13514 – *Federal Leadership in Environmental, Energy, and Economic Performance* (2009)
- Executive Order 13423 – *Strengthening Federal Environmental, Energy, and Transportation Management* (2007)
- National Energy Conservation Policy Act of 1978, as amended
- Energy Independence and Security Act (EISA) of 2007
- Energy Policy Act of 2005
- Energy Policy Act of 1992

Prescriptive and Outcome-Based Mandates

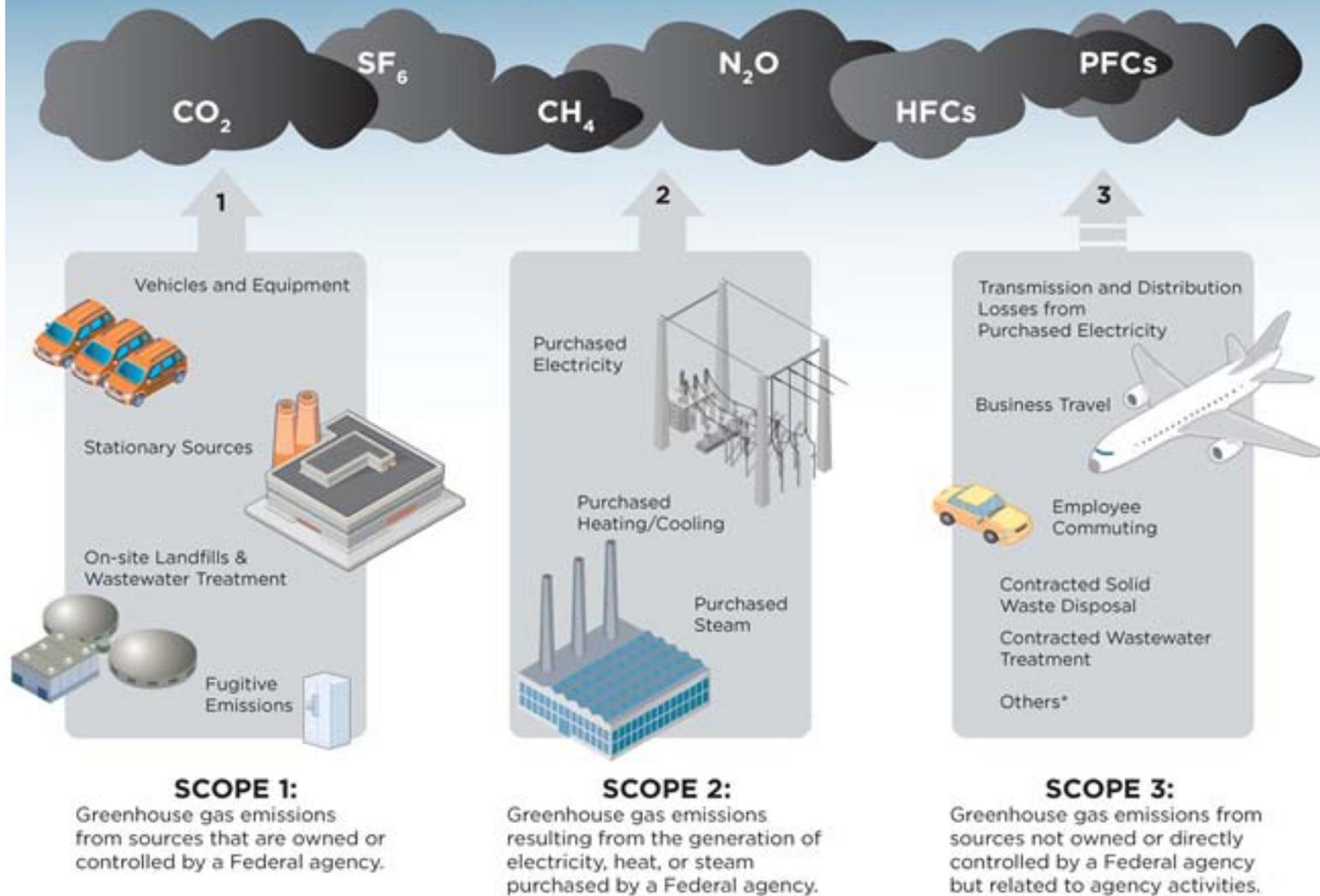


Outcome Goal: Reduction of Greenhouse Gas Emissions (GHG)

Under Section 2 of **E.O. 13514**, each Federal agency must:

- Establish a FY 2020 reduction target of scope 1 plus scope 2 GHG emissions compared to FY 2008 base year.
- Establish a FY 2020 reduction target of scope 3 GHG emissions compared to FY 2008 base year.
- Establish and submit annually a comprehensive inventory of GHG emissions across all three scopes for FY 2010 and including the FY 2008 base year.
- Rolled-up Gov't-wide goals:
 - 28% reduction for Scopes 1&2 combined
 - 13% reduction for Scope 3

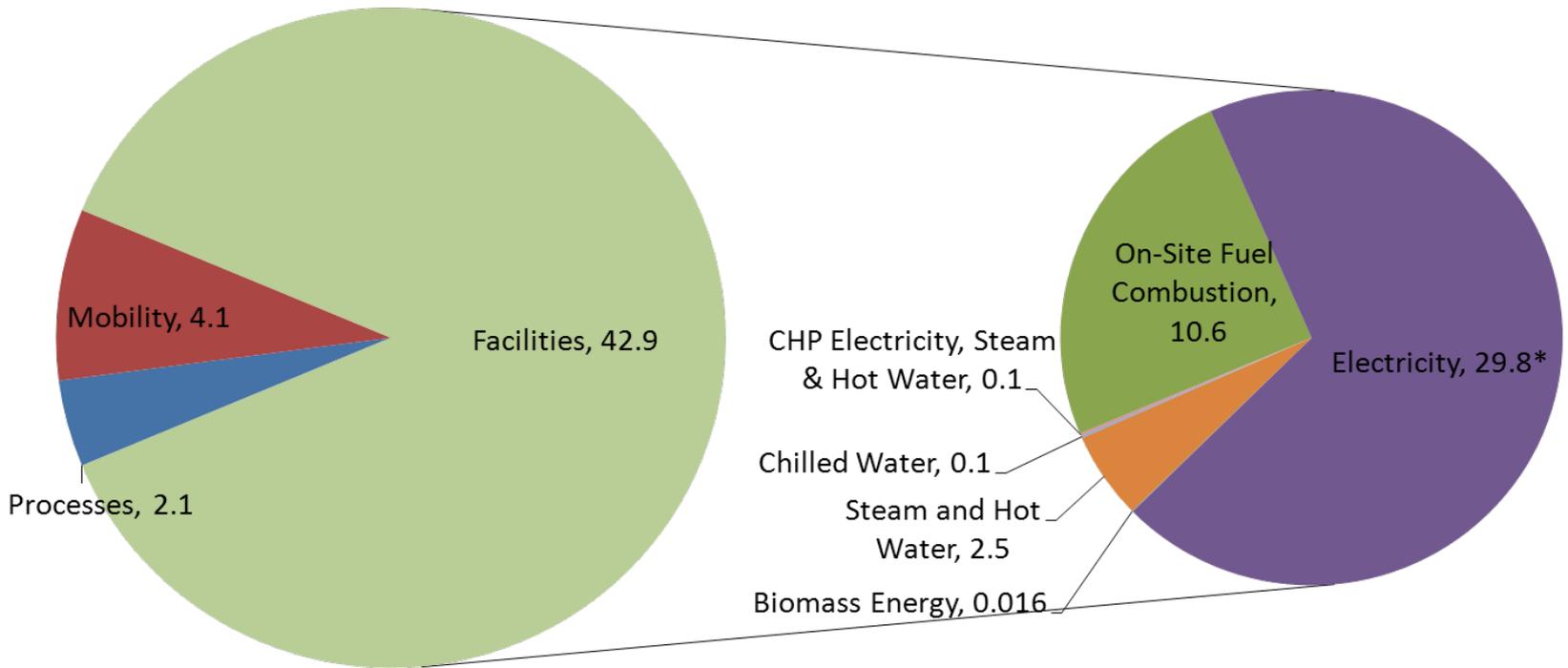
Common Sources of Federal Greenhouse Gas Emissions



*Additional, significant Scope 3 emission sources exist beyond the examples provided.

Targeted Scope 1&2 GHG Emissions

FY 2010 Federal Government Scopes 1 & 2 GHG Emissions Covered by Reduction Target
(49.1 MMTCO₂e)



*Includes reductions from purchases of renewable energy attributes

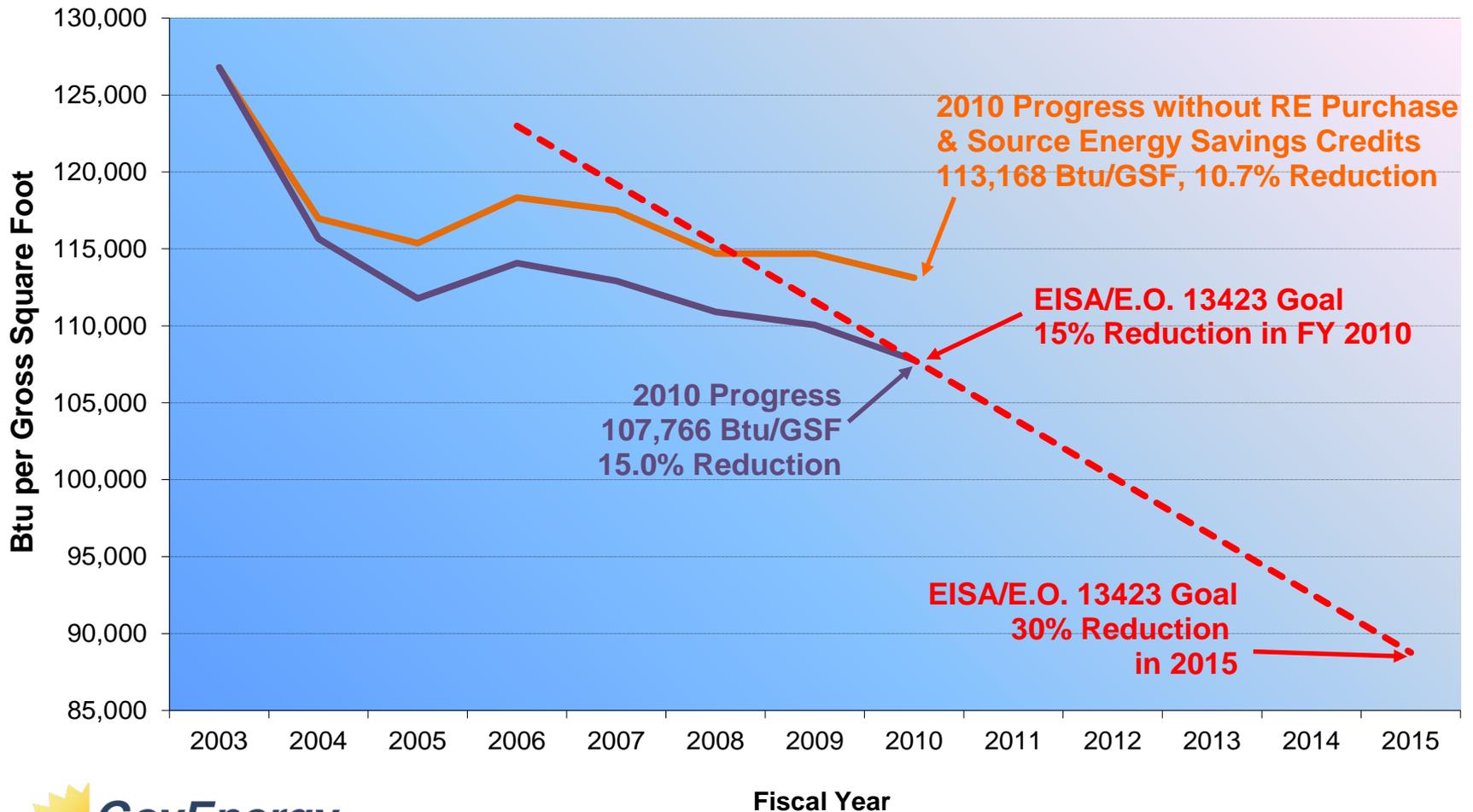
Outcome Goal: Reduction in Facility Energy Intensity

Section 431 of EISA 2007

- Mandates 30 percent reduction in energy use intensity by 2015 from a 2003 baseline.
- Amends NECPA (42 U.S.C. 8253), prior goals included:
 - 20% reduction in 1985 vs. 1975 baseline
 - 10% reduction in 1995 vs. 1985
 - 20% reduction in 2000 vs. 1985
 - 20% reduction in 2015 vs. 2003
- Measured in terms of site Btu-per-gross-square-foot
 - Credit for source-energy saving projects (cogeneration, etc.)
 - Partial credit for renewable energy *purchases* (ends in 2012)

Progress Toward Energy Intensity Reduction Goal

Overall Government Progress toward Facility Energy Efficiency Goals,
FY 2003 - FY 2010



Agency Progress Toward Energy Reduction Goal

29.4% in 2009

36.3%

21.4%

22.2%

23.6%

24.4%

16.9%

19.3%

19.9%

17.4%

15.4%

21.8%

13.6%

12.6%

13.1%

11.2%

12.3%

10.0%

23.4%

12.6%

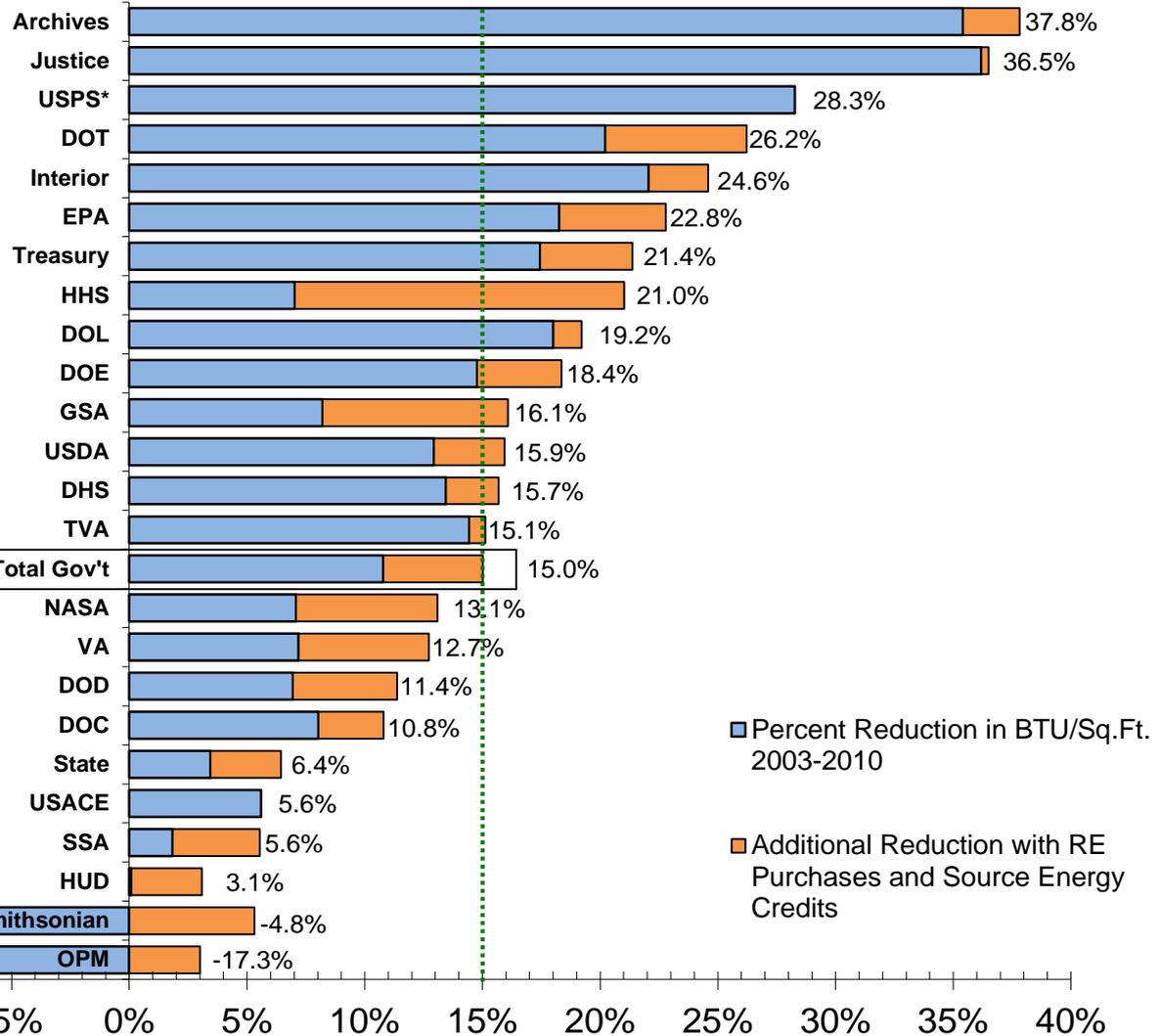
NA

3.5%

0.2%

NA

NA



■ Percent Reduction in BTU/Sq.Ft. 2003-2010

■ Additional Reduction with RE Purchases and Source Energy Credits

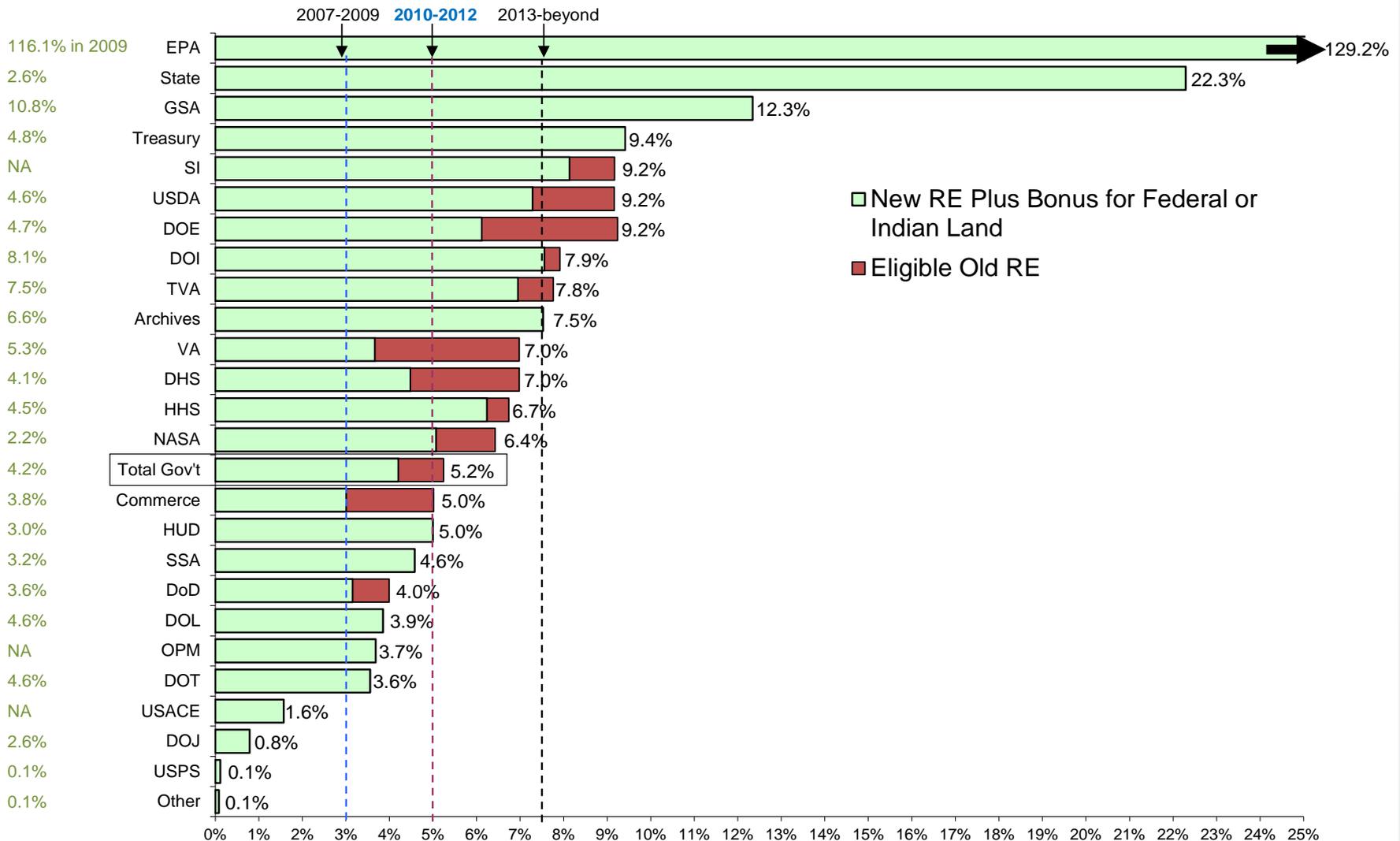
Percent Reduction in Btu/Sq.Ft. 2003-2010

Goal: Renewable Electric Energy

The **Energy Policy Act (EPAAct)** of 2005:

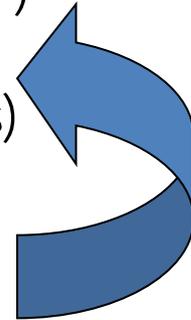
- Defines “renewable energy”
- Requires that the “total amount of *electric* energy the Fed Gov’t consumes during any fiscal year”:
 - Not less than 3% in fiscal years 2007-2009
 - Not less than 5% in fiscal years 2010-2012
 - Not less than 7.5% in fiscal year 2013 and thereafter
- Double count renewable energy if it is used at a Federal facility and produced on-site, on Federal lands, OR on Native American lands.
- **Executive Order (E.O.) 13423** mandates that at least half of renewable energy used by the Federal government must come from new renewable sources (in service after January 1, 1999).

Agency Progress Toward Renewable Energy Goal



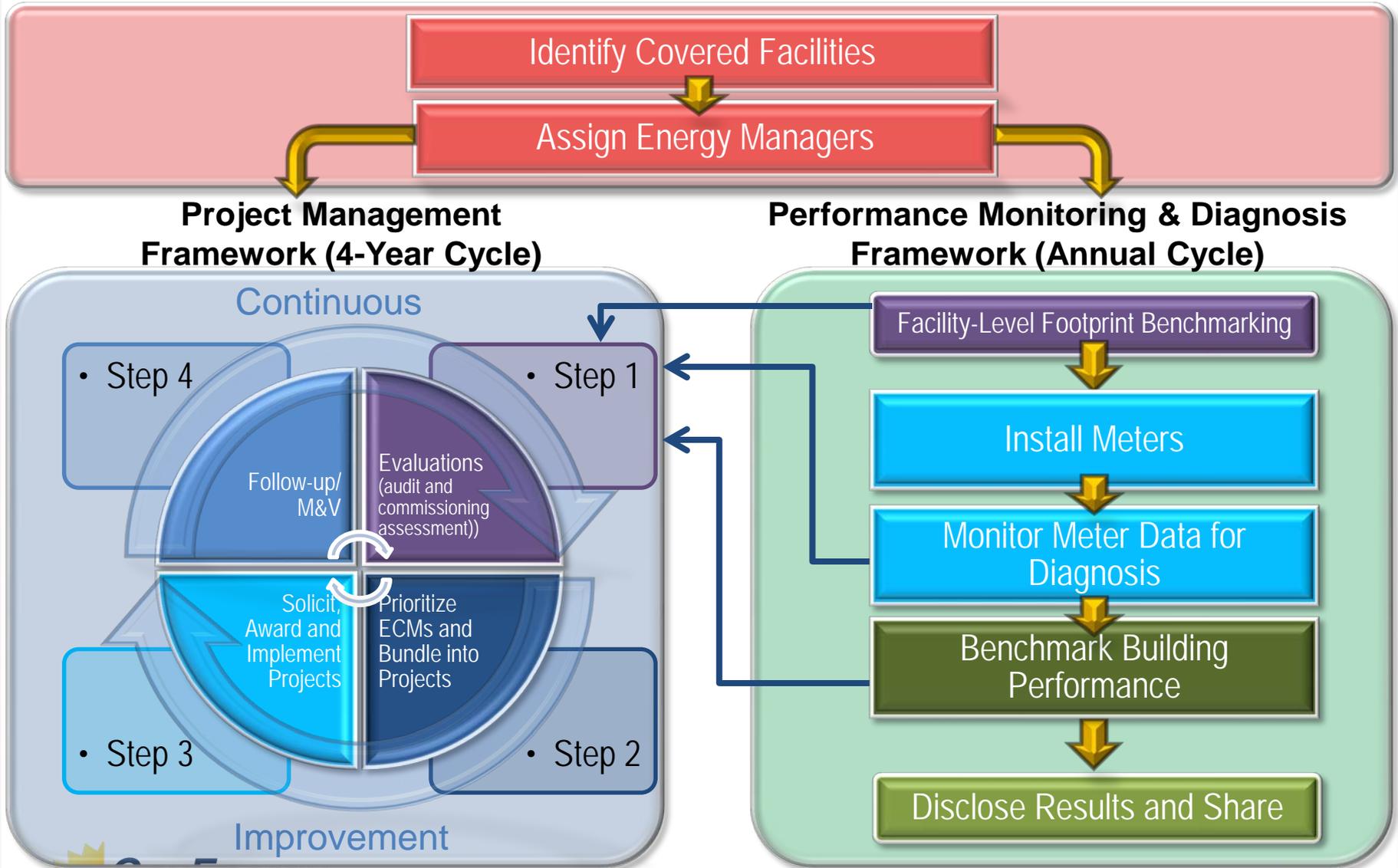
EISA's Framework for Federal Facility Management

- Agencies must identify “covered facilities” that constitute at least 75% of energy use
- Each facility must have a designated **energy manager** responsible for:
 - **Benchmarking** metered buildings (that are, or part of, “facilities”)
 - Completing **comprehensive energy/water evaluations** (audits) (approx. 25% of facilities each year; each facility every 4 years)
 - **Implementing identified ECMs**; (bundling permitted)
 - **Following up** on implemented ECMs (as part of quadrennial evaluation)
- **Web-based Compliance Tracking System (CTS)** to certify compliance, track agency progress in implementing the mandates
 - Agencies tailor reporting into CTS according to their management approach
 - Upload from centrally-managed systems or entered by facility managers bottom-up
 - Reports will be available to Congress, industry, and the public
 - Agencies may exempt facility-level data from disclosure for national security purposes



Overall EISA Facility Management Approach

BASIC STEPS FOR EISA PROJECT MANAGEMENT AND PERFORMANCE MONITORING



Guiding Principles for Existing Buildings – Five Categories

1. Employ Integrated Design Principles
2. Optimize Energy Performance
3. Protect and Conserve Water
4. Enhance Indoor Environmental Quality
5. Reduce Environmental Impacts of Materials

Highlights of Guiding Principles

- All Guiding Principles (27) are required to be met! – 100% or failure
- Energy requirement
 - ENERGY STAR Portfolio Manager rating of at least 75 or 20% reduction
- Water Requirement
 - 20% indoor potable water reduction
 - 50% outdoor water reduction

Targeting Strategies – Guiding Principles

- Skip difficult cases, but determine GSF requirement by 2015
- Prioritize small subsets of buildings
- Are selected buildings classified as “Covered”, thus requiring energy and water evaluations?
- Identify those buildings that are metered
- Is the building served by ESCO or WSCO?
- Determine support from Building Managers

Useful Information – Guiding Principles

- Meeting the 15% goal will be difficult, seek knowledge from others
- Become knowledgeable in the use and capability of the EPA Portfolio Manager GP assessment tool
- Become knowledgeable in the information contained in the Whole Building Design Guide (<http://www.wbdg.org>)

Energy Efficiency Product Procurement Requirements

A number of laws, executive orders, and regulations require Federal agencies...

- to purchase products with low standby power (generally 1 W or less; *EISA, E.O. 13423, E.O. 13221*)
- that are ENERGY STAR-qualified or meet FEMP efficiency requirements (*EPA Act 2005, E.O. 13423, Final rule updating 10 CFR Part 436*)
- include FAR Part 52.223-15 in all contracts and solicitations (*Federal Acquisition Regulations (FAR) Part 23*)

...when acquiring or specifying energy-consuming products.

Goal: Reduce Federal Fleet Petroleum Consumption and GHG Emissions

Reduce GHG Emissions

Reduce Petroleum Consumption

Create agency
strategic plan
EISA Sec. 142,
E.O. 13514

Acquire
PHEVs
E.O. 13423

Increase
Alternative fuel use
EISA Sec.142,
E.O. 13423

Acquire low
GHG emitting
Vehicles
EISA Sec.141

Report
Annually
EPAAct 1992,
EPAAct 2005

Implement

- Acquire AFVs (*EPAAct 1992*)
- Use AF in AFVs (*EPAAct 2005 Sec. 701*)
- Install renewable fuel pumps (*EISA Sec. 246*)

Questions ??

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