

Inventory of Federal Greenhouse Gas Emissions, Reductions to Date, and Potential Reductions

Interagency Sustainability Working Group
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DOE Federal Energy Management Program

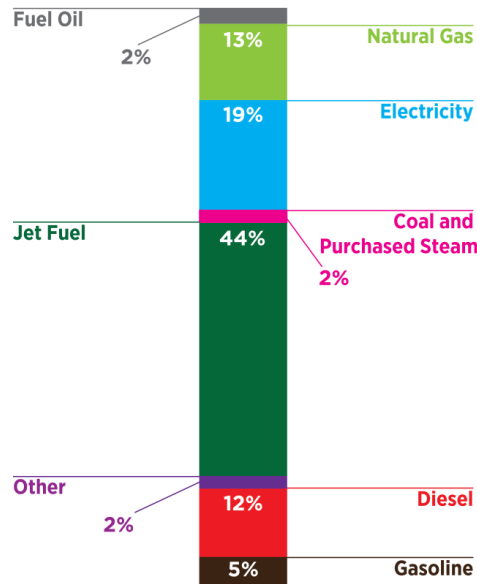
Overall Federal Energy Consumption and GHG Emissions

Federal Energy Consumption and GHG Emissions for FY 2014

0.94 QUADS, \$23 Billion

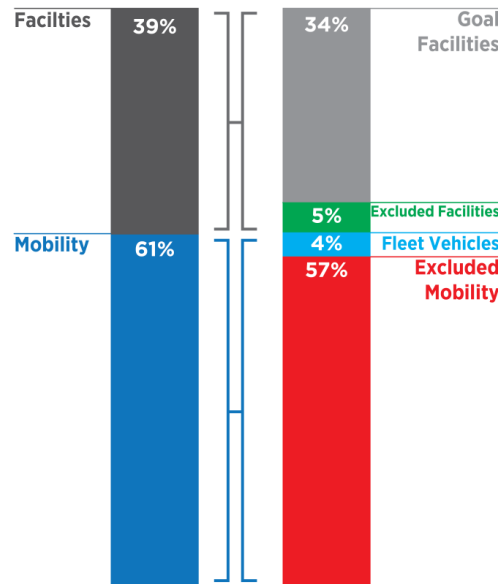
82 MMTCO_{2e}

Consumption By Fuel Type



Total: 941.5 tBtu

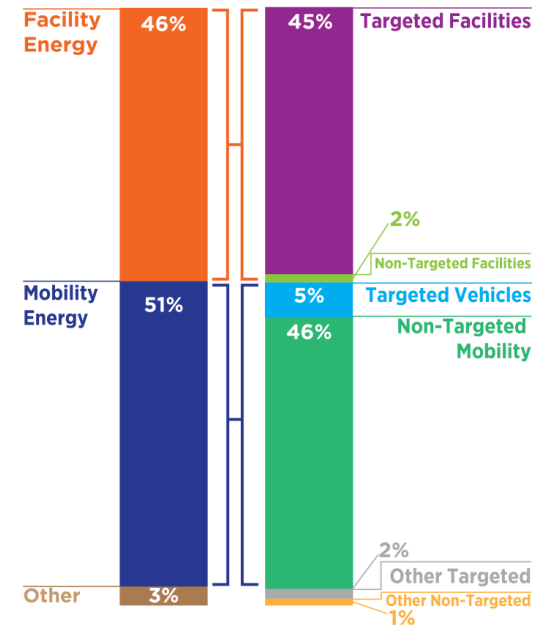
End-Use Sector



Total 941.5 tBtu
Goal-Subject 357.5 tBtu

~ 90% of "goal" energy use from facilities

Scope 1 & 2 GHG Emissions



Total 81.9 MMTCO_{2e}
Targeted 42.4 MMTCO_{2e}

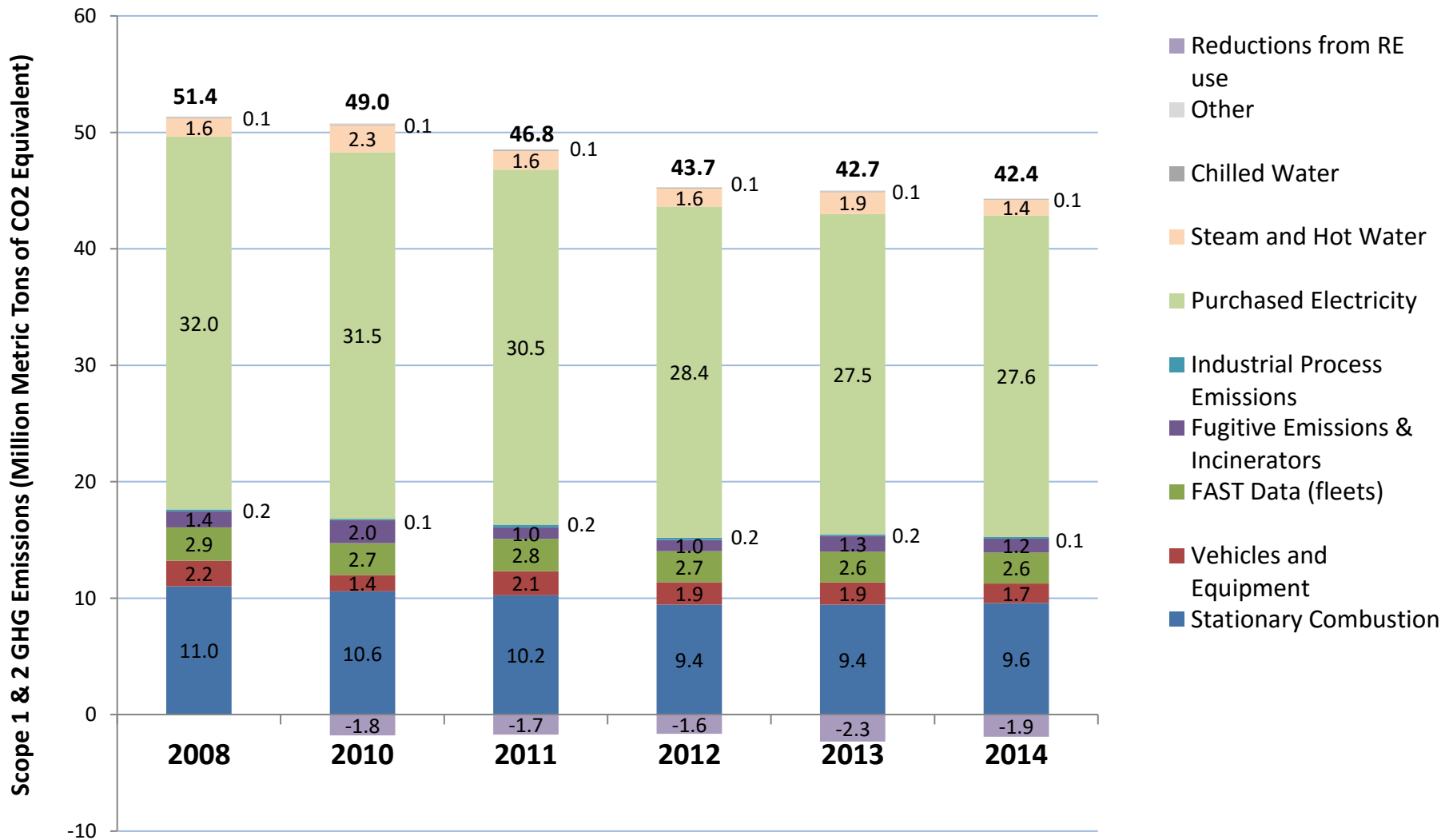
~ 90% of "target" GHG emissions from facilities

Overall Federal GHG Inventory, FY 2014

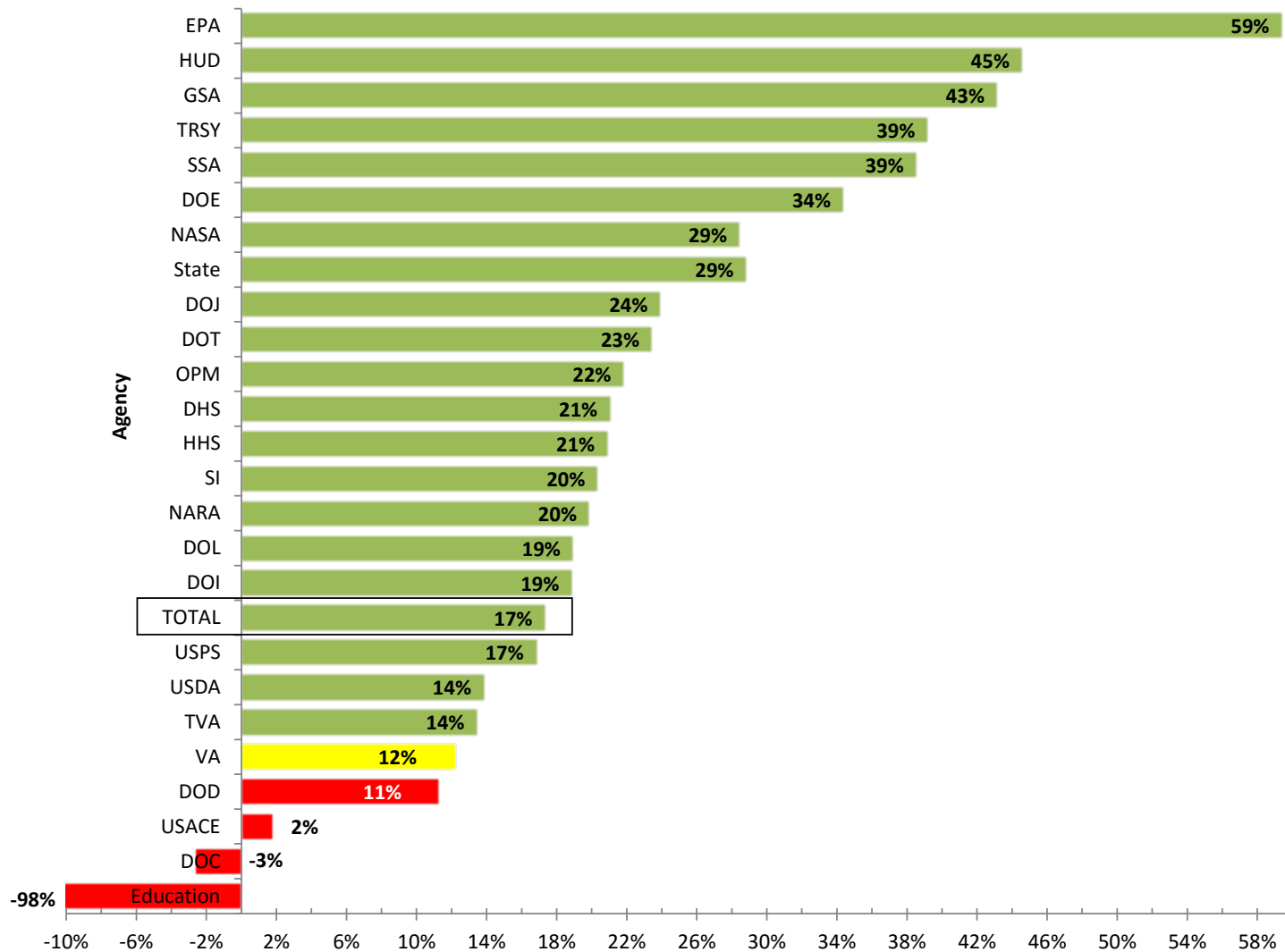
Greenhouse Gas Inventory (Metric Tons of Carbon Dioxide Equivalent)

Greenhouse Gas Inventory: Government Totals		FY 2014	
Scope and Category	GHG Emissions Covered by Reduction Targets (MT CO2e)	GHG Emissions Not Covered by Reduction Targets (Military Operations, Law Enforcement, and Other) (MT CO2e)	Total Quantity Emitted Biogenic (MT CO2e)
Scope 1: On-Site Fuel Consumption at Federal Facilities	9,589,175.4	96,131.9	0.0
Scope 1: Mobile Emissions--Vehicles, Aircraft, Ships, and Equipment	1,671,220.1	36,812,379.1	10,186.0
Scope 1: Mobile Emissions--Passenger Fleet Vehicles	2,649,786.1	625,581.5	102,504.2
Scope 1: Fugitive Emissions--Fugitive Fluorinated Gases and Other Fugitive Emissions	863,725.8	777,840.2	
Scope 1: Fugitive Emissions--On-site Wastewater Treatment	13,277.0		2,440.2
Scope 1: Fugitive Emissions--On-site Landfills and Municipal Solid Waste Facilities	317,716.8		89,749.4
Scope 1: Manufacturing and Industrial Process Emissions	149,079.4	0.0	
Subtotal Scope 1	15,253,980.6	38,311,932.8	204,879.9
Scope 2: Purchased Electricity	27,598,416.5	1,147,764.6	0.0
Scope 2: Purchased Biomass Energy	29,462.6		2,211,324.9
Scope 2: Purchased Steam and Hot Water	1,375,942.8	39,482.0	0.0
Scope 2: Purchased Chilled Water	58,869.6	0.0	0.0
Scope 2: Purchased Combined Heat and Power Electricity, Steam & Hot Water	11,205.5	0.0	0.0
Subtotal Scope 2	29,073,897.1	1,187,246.6	2,211,324.9
Scope 2: Reductions from Renewable Energy Use	-1,900,844.9		0.0
Subtotal Scope 1 & 2	42,427,032.7	39,499,179.4	2,416,204.7
Scope 3: Transmission and Distribution (T&D) Losses	1,696,037.7	71,403.7	0.0
Scope 3: Federal Employee Business Air Travel	2,406,027.3		
Scope 3: Federal Employee Business Ground Travel	399,835.3		
Scope 3: Federal Employee Commuting	9,309,787.2		
Scope 3: Contracted Wastewater Treatment	15,175.7		9,339.2
Scope 3: Contracted Municipal Solid Waste Disposal	1,374,302.2		365,028.2
Subtotal Scope 3	15,201,165.4	71,403.7	374,367.4

Targeted Scope 1&2 GHG Emissions, FY 2008 - FY 2014



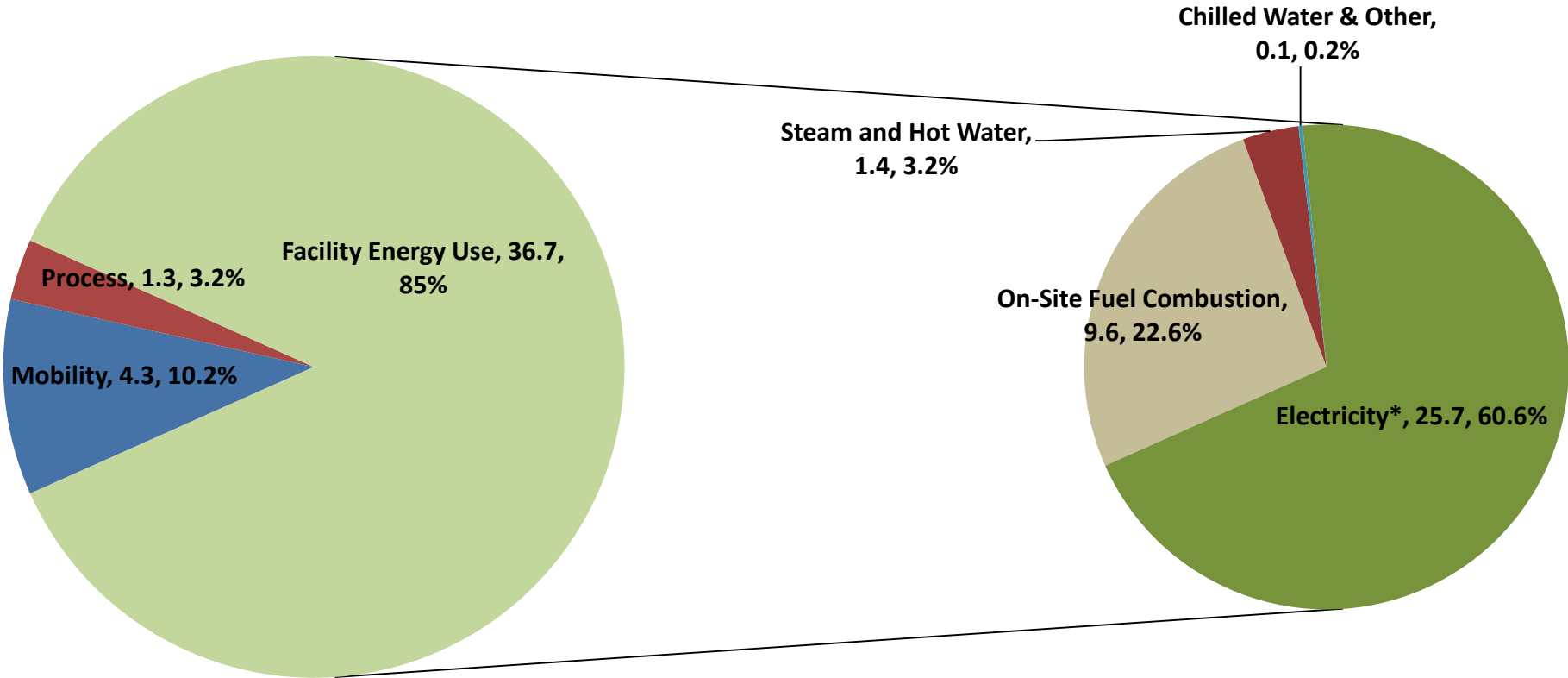
Agency Performance Toward Scope 1&2 Greenhouse Gas Reduction Goals



Percentage Reduction in Targeted Scope 1&2 GHG Emissions, FY 2008-2014

Sources of Scope 1&2 Greenhouse Gas Emissions

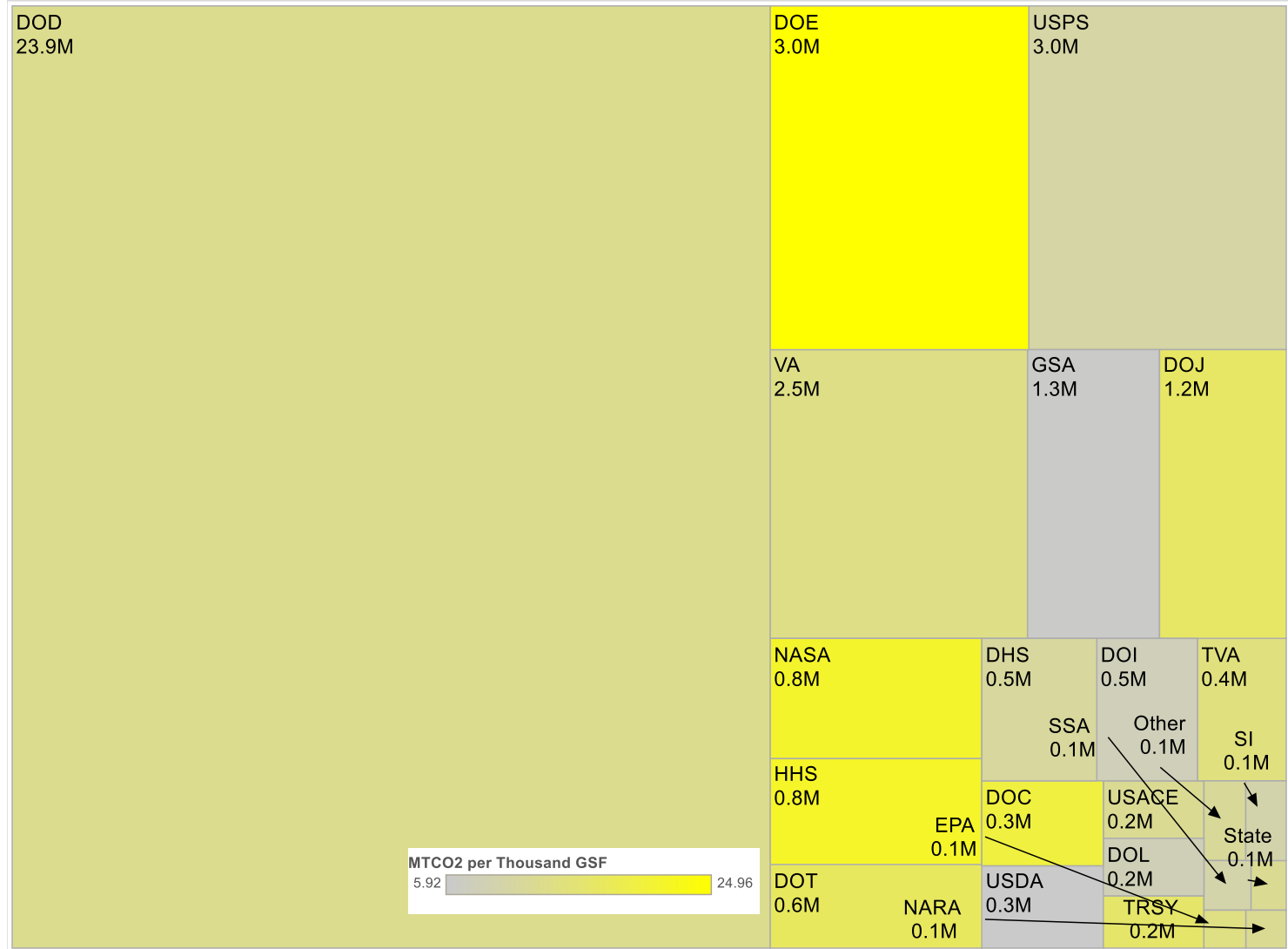
FY 2014 Federal Government Scopes 1 & 2 GHG Emissions Covered by Reduction Target (42.4 MMTCO₂e)



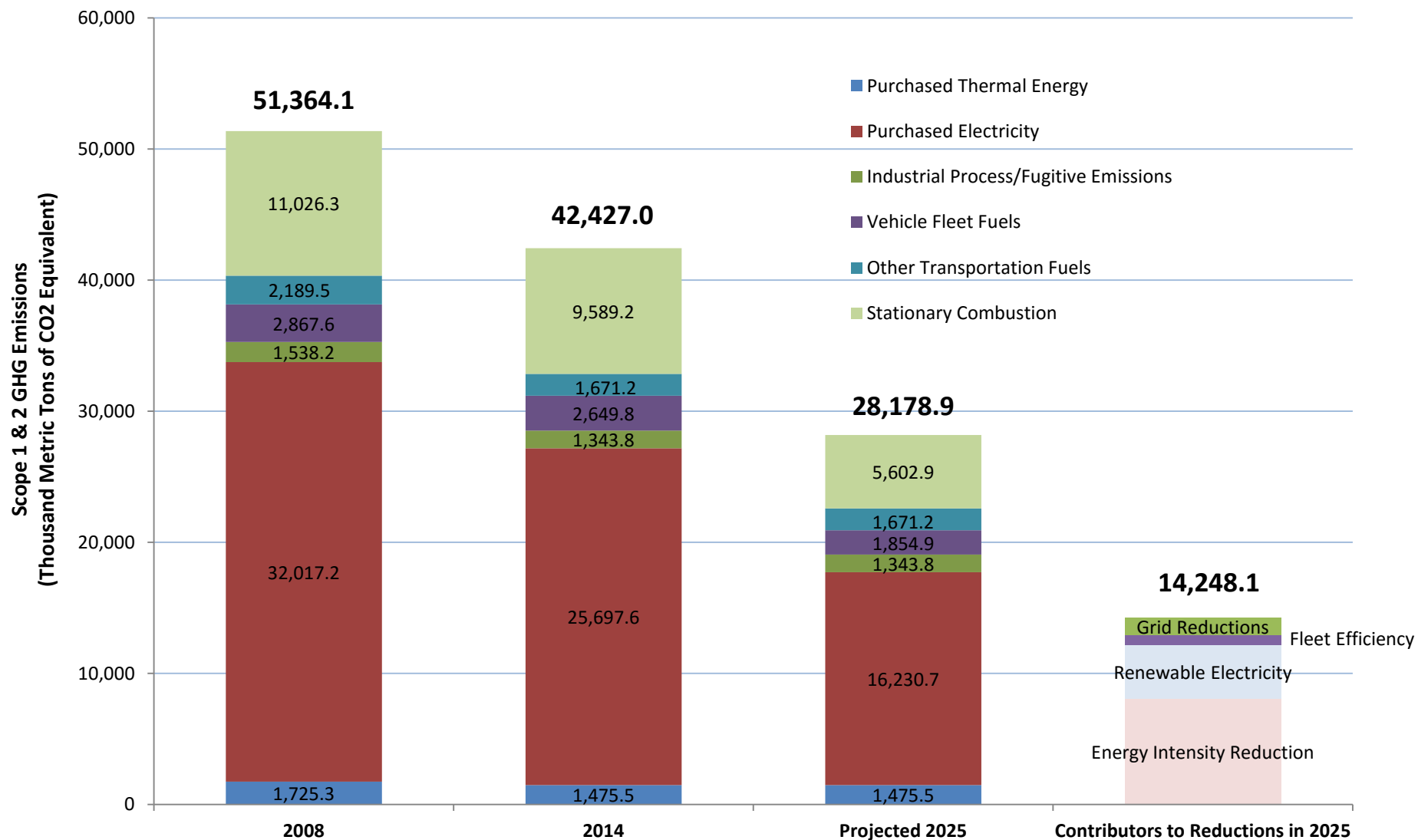
*includes reductions from purchases of renewable energy attributes

Agency Non-Mobility Scope 1&2 GHG Emissions and Intensity

Scope 1 & 2 Non-Mobility GHG Intensity



Potential Reductions and Contributors for 2025 Scope 1&2 GHG Reduction Targets

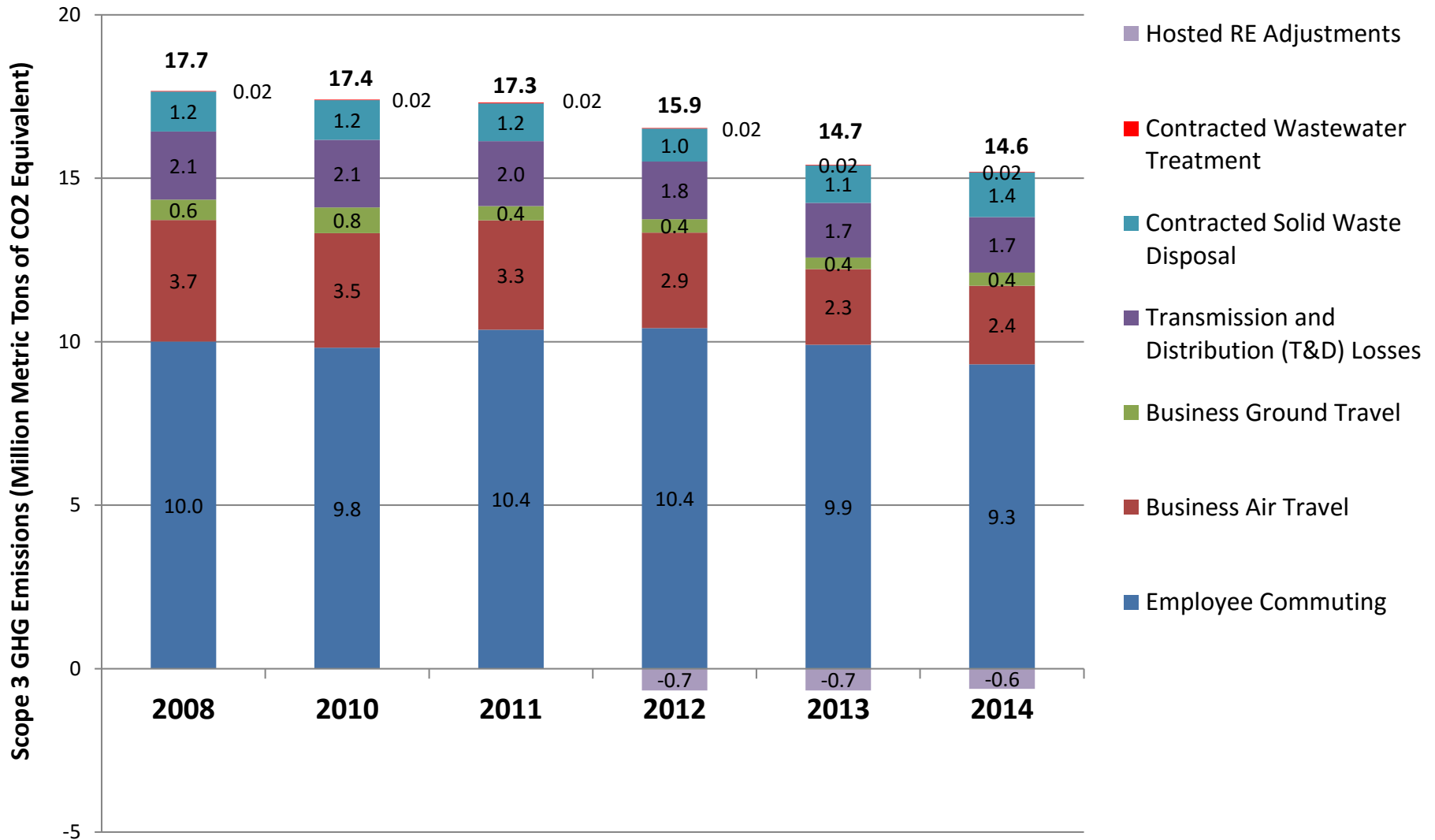


Potential Reductions and Contributors for 2025 Scope 1&2 GHG Reduction Targets

Agency Targets	2025 Target	Reductions (MTCO2e)
Energy/Intensity (Btu/GSF) Reduction Percentage	25%	8,082,983
Renewable Electricity Target Percentage	30%	4,056,491
Planned Total Clean Energy Use	25%	-
Improvement in Passenger Vehicle Fleet Efficiency	30%	794,936
Other Emission Reduction Contributor		
Percentage Grid De-Carbonization	17.4%	1,313,677

Greenhouse Gas Emissions Inventory	FY 2008 GHG Emissions Covered by Reduction Targets (MT CO2e)	FY 2014 GHG Emissions Covered by Reduction Targets (MT CO2e)	FY 2025 GHG Emissions Covered by Reduction Targets (MT CO2e)
Scope 1: On-Site Fuel Consumption at Federal Facilities	11,026,293	9,589,178	5,602,942
Scope 1: Mobile Emissions--Vehicles, Aircraft, Ships, and Equipment	2,189,469	1,671,220	1,671,220
Scope 1: Mobile Emissions--Passenger Fleet Vehicles	2,867,563	2,649,786	1,854,850
Scope 1: Fugitive Emissions--Fugitive Fluorinated Gases and Other Emissions	1,113,295	863,726	863,726
Scope 1: Fugitive Emissions--On-site Wastewater Treatment	11,834	13,277	13,277
Scope 1: Fugitive Emissions--On-site Landfills and Municipal Solid Waste	248,676	317,717	317,717
Scope 1: Manufacturing and Industrial Process Emissions	164,417	149,079	149,079
Subtotal Scope 1	17,621,547	15,253,983	10,472,812
Scope 2: Purchased Electricity	32,017,217	27,598,417	22,187,992
Scope 2: Purchased Biomass Energy	245	29,463	29,463
Scope 2: Purchased Steam and Hot Water	1,596,163	1,375,943	1,375,943
Scope 2: Purchased Chilled Water	59,688	58,870	58,870
Scope 2: Purchased Combined Heat and Power Elec., Steam & Hot Water	69,246	11,205	11,205
Subtotal Scope 2	33,742,559	29,073,897	23,663,473
Scope 2: Reductions from Renewable Energy Use	0	-1,900,845	-5,957,336
Subtotal Scope 1 & 2	51,364,107	42,427,035	28,178,948

Targeted Scope 3 GHG Emissions FY 2008 - FY 2014



See Here:

Federal Comprehensive Annual Energy Performance Data

FEDERAL COMPREHENSIVE ANNUAL ENERGY PERFORMANCE DATA

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In fiscal year (FY) 2014, federal agencies reported energy use to the Federal Energy Management Program (FEMP) that totals 0.94 quadrillion British thermal units (Btu) or "quads" of delivered energy across the three energy sectors:

- Buildings that are subject to statutory energy-reduction requirements
- Buildings that are excluded from the energy-reduction requirements
- Vehicles and equipment.

Energy Consumption, GHG Emissions | Energy Use Reduction | Renewable Energy Use
 Water Use Reduction | GHG Reduction | Historical Energy Intensity

TOTAL ENERGY CONSUMPTION BY END USE SECTOR AND TYPE, FY 2014

In FY 2014, the federal government reported 0.94 quads Btu of delivered energy. These 0.94 quads Btu represent 1.6% of the 59.9 quads of delivered energy used in the United States. Jet fuel is the principal source of energy used by the federal government, comprising 44% of all energy consumed (0.41 quads). Electricity and natural gas are also significant energy sources, consisting of 19.3% and 13.3% (0.18 and 0.13 quads), respectively. Energy use is responsible for 97% of the government's scope 1 and 2 greenhouse gas (GHG) emissions.

Fuel Type	Percentage
Jet Fuel	44%
Other	2%
Diesel	12%
Gasoline	5%
Coal and Purchased Steam	2%
Electricity	19%
Natural Gas	13%
Fuel Oil	2%
Total	941.5 Trillion Btu

Sector	Percentage
Vehicles	61%
Excluded Mobility	57%
Facilities	39%
Goal Buildings	34%
Excluded Facilities	5%
Fleet Vehicles	4%
Total	941.5 Trillion Btu
Goal-Subject	357.5 Trillion Btu

Category	Percentage
Facility Energy	46%
Vehicles Energy	51%
Other	3%
Targeted Facilities	45%
Non-Targeted Facilities	2%
Targeted Vehicles	5%
Non-Targeted Vehicles	46%
Other Targeted	2%
Other Non-Targeted	1%
Total	81.9 Million MTCO₂e
Target	42.4 Million MTCO₂e

For more information, see [Federal Progress Toward Energy/Sustainability Goals](#), which offers energy management and sustainability based on FY 2014 reported findings.

Also see FEMP's [Comprehensive Annual Energy Data and Sustainability Performance](#).

- Publicly available data tables of agency energy and water consumption
- Detailed annual comprehensive greenhouse gas (GHG) inventories by federal agency along with progress toward achieving scope 1 and 2 GHG and scope 3 GHG reduction targets
- Energy costs by end-use sector and efficiency investment information
- Progress toward key goals outlined in the National Energy Conservation Policy Act, as amended (42 U.S.C. 8253-8258); Energy Policy Act of 2005 (42 U.S.C. 15852); and Executive Order 13893

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Comprehensive Annual Energy Data and Sustainability Performance

v1.1.3.0

Federal Facility Reporting and Data » Comprehensive Annual Energy Data and Sustainability Performance » Annual Data

FEDERAL GOVERNMENT ENERGY USE

Federal agencies report energy used in three end-use sectors:

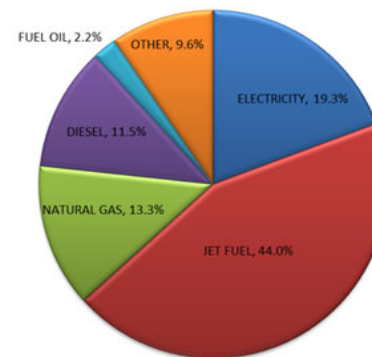
1. Buildings subject to statutory energy reduction requirements (goal buildings),
2. Buildings excluded from the energy reduction requirements (goal-excluded facilities),
3. Vehicles and equipment.

During FY 2014, Federal agencies reported using a total of 1.4 quadrillion British thermal units (Btu) or "quads" of primary energy across the three energy sectors. Primary energy includes the energy used at utility plants to generate electricity and steam. These 1.4 quads represent 1.4 percent of the 98.5 quads used in the United States. In total, 0.9 quads were delivered to the point of use at Government facilities and consumed in vehicles and operations.

Jet fuel is the principle source of energy used by the Federal government, comprising 44.0 percent of all energy consumed (0.41 quads consumed). Electricity and natural gas are also significant energy sources, consisting of 19.3 percent and 13.3 percent respectively (0.18 and 0.13 quads).

[Read more . . .](#)

Total Energy Consumption by Fuel Type: 0.94 quads



Greenhouse Gas Data

ENERGY USE AND COST

All End-Use Sectors

A-1 Total Site-Delivered Energy Use in All End-Use Sectors, by Federal Agency (Billion Btu)

A-2 Government-Wide Site-Delivered Energy Use and Costs in All End-Use Sectors (Constant Dollars)

A-3 Site-Delivered Energy Use, Costs, and Gross Square Footage of Federal Facilities by Agency

OTHER METRICS

Greenhouse Gas Emissions

E-1 Comprehensive Greenhouse Gas (GHG) Inventories by Agency and Fiscal Year

E-2 Total Scope 1 & 2 GHG Emissions Subject to Reduction Targets (Compared to FY 2008)

E-3 Scope 1 & 2 GHG Emissions Subject to Reduction Targets by Category (Compared to FY 2008)