

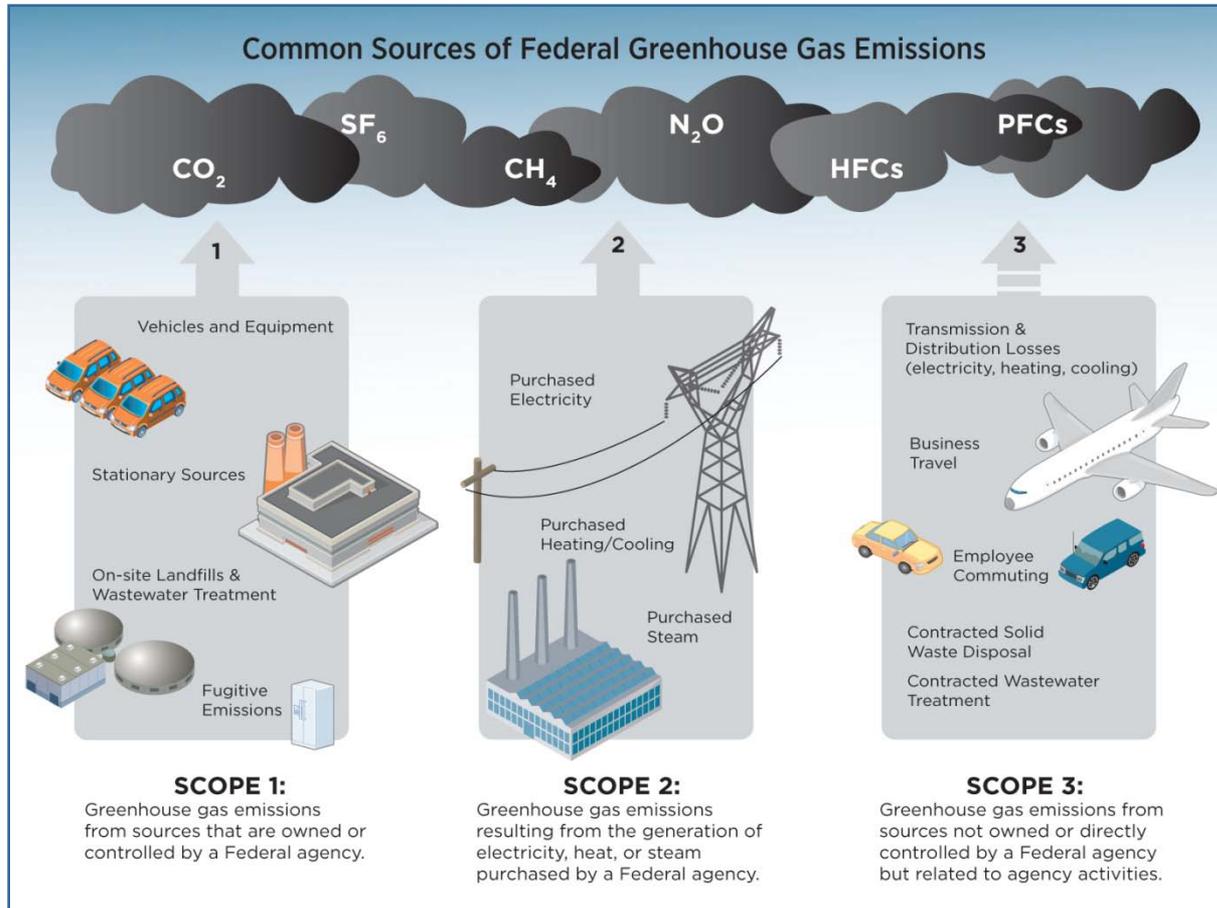


• August 15-18, 2010 • Dallas, Texas •  
• Dallas Convention Center •

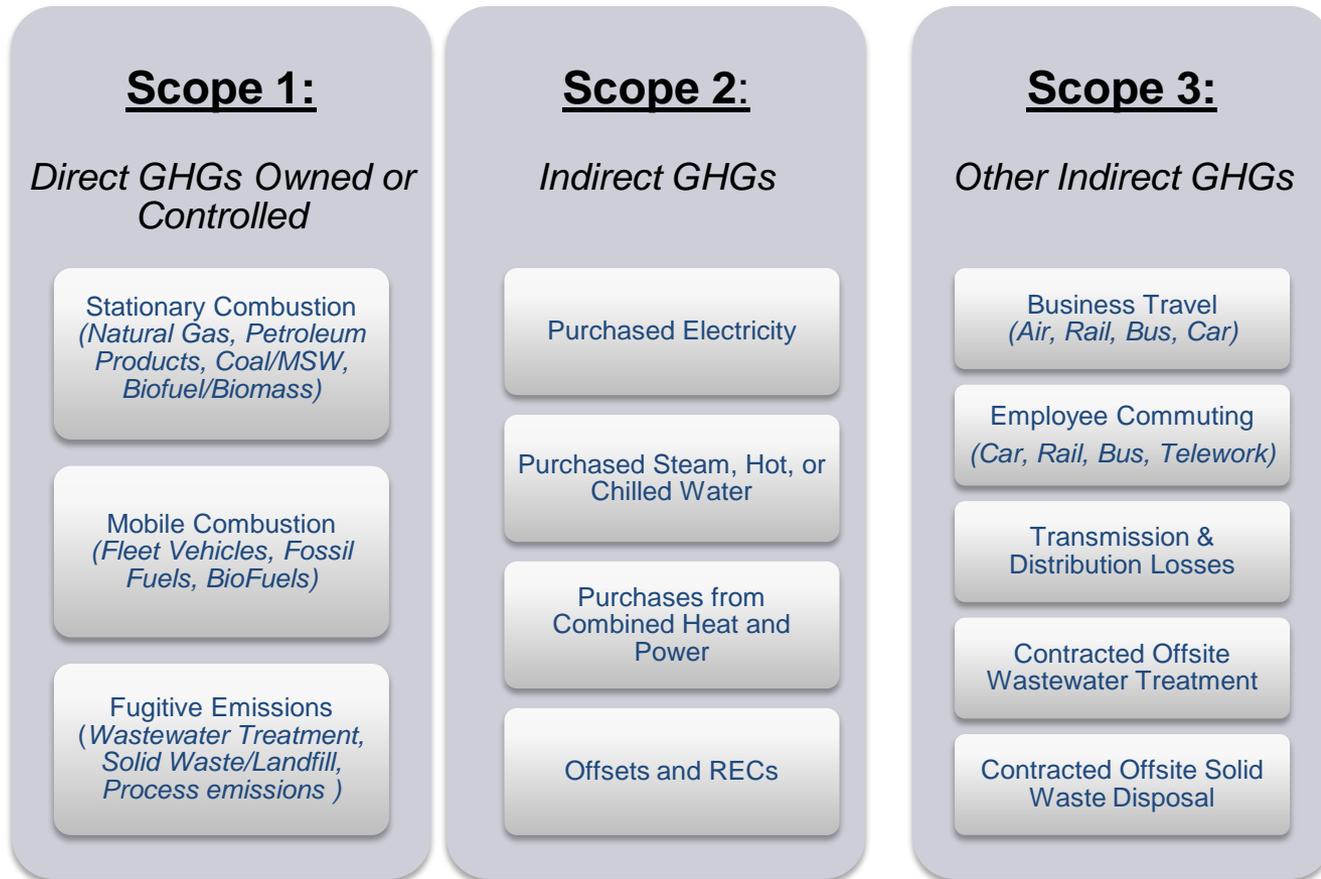


Reporting Greenhouse Gas Inventories:  
GSA Carbon Footprint Tool & Energy Services

# Scope 1, 2, and 3 GHG Emissions



# GHG Emissions Breakdown



# Home Page – <https://www.carbonfootprint.gsa.gov>

## Welcome

**NOTICE:** On June 29, we will archive any data you may have input into the tool during the Road Test of the Public Sector Standard and agency preview period. This data will still be available upon request pending approval by your agency's Senior Sustainability Officer (SSO), please send all data transfer requests with appropriate documentation to [carbonfootprint@gsa.gov](mailto:carbonfootprint@gsa.gov) received prior approval from your SSO to [carbonfootprint@gsa.gov](mailto:carbonfootprint@gsa.gov).

## A Tool Specifically Designed for a Bottom-Up, Comprehensive GHG Inventory

GSA has developed the GSA Carbon Footprint and Green Procurement Tool to assist agencies in managing their GHGs as required by [Executive Order \(EO\) 13514](#) and recent energy laws. The tool can address a broad range of tasks including:

- Calculation of an agency's GHG baseline, broken down by different scopes
- Assistance with setting GHG reduction targets
- Compilation of a building-by-building GHG emissions inventory
- Preparation for reporting emissions to the Department of Energy's GHG Reporting Portal

[Click here to sign in to the GSA Carbon Footprint and Green Procurement Tool](#)

## Product Highlights

### Bottom-Up Calculations

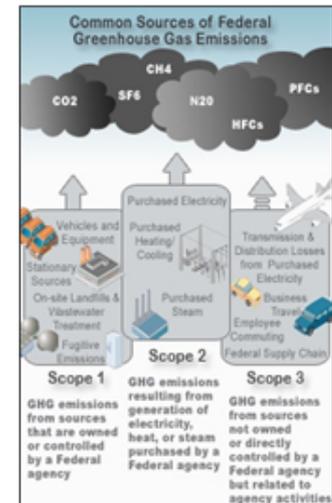
This tool can assist agencies in compiling their GHG emissions inventory using a bottom-up calculation on facility level data with the capability of rolling up to annual agency aggregate level data. This allows an agency to create detailed baseline GHG data to enable the development of reduction targets in the future.

### Pre-population of Aggregate Data

With permission from your agency's Senior Sustainability Officer (SSO), GSA will pre-populate the tool with agency-specific data available from GSA business programs. This data includes building energy usage data from GSA's Public Building Service, fuel usage data from GSA's Fleet Program and air business travel data for those agencies using the GSA Travel Management Information Service.

### Enterprise Dashboard

The tool provides at-a-glance visualization of key metrics using 3D charts and sliders where agencies can analyze and forecast emissions by adjusting for specific scenarios.



### DOE Greenhouse Gas Reporting Portal

While agencies can use the GSA Carbon Footprint Tool to calculate their emissions, they must use the DOE Greenhouse Gas Reporting

# Agency Profile and Site Management

Enterprise Profile
Analyzer
Dashboard
Reports
Carbon Profile Map
ROI Calculator
Employee Survey

### User Profile

- Update Password
- Update Information

### Agency

- Manage Profile
- Manage Sites
- Manage Users

### Locations



- Crystal City
- Willow Wood
- Test - Mobility Paper

### GHG Reports

## GSA ITS Emissions

Category	2008 CO <sub>2</sub> e Emission	2009 CO <sub>2</sub> e Emission	2010 CO <sub>2</sub> e Emission
<b>Enterprise</b>	<b>4,666</b>		<b>2,933</b>
Purchased Electricity	2,591		1,704
Direct Fuel	54		0
Business Travel	801		0
Commuting	1,219		1,229

Enterprise Profile
Analyzer
Dashboard
Reports
Carbon Profile Map
ROI Calculator
Employee Survey

You are here: [Enterprise Profile](#) >> [Manage Agency Sites](#)

### Sites (Add)

Action	Site Name	Address 1	Address 2	City	State	Zip	eGRID Subregion	Area		Building Ownership	Lease Type	LEED Cert	Staff Size	Fiscal Year	Point of Contact	
								Building	Occupied						Name	Phone
	Crystal City	2200 Crystal Drive		Arlington	VA	22202	SERC Virginia/Carolina	250000	24388			None	114	2008	Tisa Richardson	(202) 219-1905
	Test - Mobility Paper	1800 F St NW		Washington	DC	20405	RFC East	764125	522368	Unknown		None	1000	2010		
	Willow Wood	10304 Eaton Pl		Fairfax	VA	22030	SERC Virginia/Carolina	134915	69744			None	165	2008	Lisa Hurst	(202) 501-3859



GovEnergy  
www.govenergy.gov

GovEnergy 2010 5

# Scenario List: GHG Inventory Management

Enterprise Profile **Analyzer** Dashboard Reports Carbon Profile Map ROI Calculator Employee Survey

**Carbon Footprint Analyzer: Scenario List**

Please click on the column heading to sort your scenarios or choose one for a site. please click on the corresponding site name.

Run the Carbon Footprint Analyzer | See Scenario Report | Run the Dashboard | Edit the Scenario | Copy the Scenario | Delete this Scenario

Create a new scenario | GHG O

Site filters allow you to quickly jump to specific data

Site Group: all site groups go  
 Site: all sites go  
 Fiscal Year: all years go

Scope emissions are in metric tons of CO<sub>2</sub>e.

Capability to group sites into a campus, region, department or custom grouping

Fiscal Year	Site Group	Site	User	Scenario	Last Updated	Scope	Scope	Scope	Total
2008	Integrated Technology Services	<a href="#">Crystal City</a>	mkcorrigan						
2008	Integrated Technology Services	<a href="#">Crystal City</a>	bwass						
2008	Integrated Technology Services	<a href="#">Crystal City</a>	mkcorrigan						
2008	Integrated Technology Services	<a href="#">Crystal City</a>	mcorrigan						
2008	Integrated Technology Services	<a href="#">Crystal City</a>	mcorrigan						
2008	Integrated Technology Services	<a href="#">Crystal City</a>	mkcorrigan						
2008	Integrated Technology Services	<a href="#">Crystal City</a>	mic_barba84						
2008	Integrated Technology Services	<a href="#">Crystal City</a>	bwass						
2008	Integrated Technology Services	<a href="#">Crystal City</a>	mkcorrigan						
2008	Integrated Technology Services	<a href="#">Crystal City</a>	mkcorrigan						

Show 10 entries

**Crystal City (edit)**

Site Point of Contact

Address 2200 Crystal Drive, Arlington, VA 22202  
 Site Group Integrated Technology Services  
 Name Tisa Richardson  
 Phone Number (202) 219-1905

**Scenarios**

The selected scenario is the one that represents this site when it's data is combined with other sites, for example in reports. Below are in MT CO<sub>2</sub>e.

2010

Selected	Scenario Name	Scope 1	Scope 2	Scope 3	Total
<input checked="" type="radio"/>	2010 GSA ITS Demo	0	0	170	170
<input type="radio"/>	BI-Weekly Commuting Report - Week 1(SAMPLE)	0	0	134	134
<input type="radio"/>	BI-Weekly Commuting Report - Week 2 (SAMPLE)	0	0	134	134

2008

Selected	Scenario Name	Scope 1	Scope 2	Scope 3	Total
<input type="radio"/>	Baseline (COMMUTING TEST)	0	0	0	0
<input type="radio"/>	BWass - Demo Scenario	124	1,447	847	2,418
<input type="radio"/>	copy of Demo	63	1,447	847	2,357
<input type="radio"/>	copy of Demo	42	1,447	876	2,364
<input type="radio"/>	copy of OFFICIAL - do not modify	0	102	260	362

You can create multiple "scenarios" for greater flexibility when analyzing changes to emissions, energy and water use

# Carbon Footprint Analyzer – Data Input Screen

Enterprise Profile > Scenarios List

EO 13514 Section 9 Recommendations  
Analyzer Calculations and Assumptions

● Incomplete ● In Progress ● Complete

**Total Emissions FY 2008**  
**70** metric tons CO<sub>2</sub>e

Scope 1

Scope 1 | Scope 2 | Scope 3 | Water | GHG Report

Scope 1 Navi > Scope 1 Navi

Technical Support Document

## Scope 1: Direct

### Combustion

Stationary Combustion

- Natural Gas
- Petroleum
- Coal
- Biofuel/Biomass

### Mobile Combustion

- Fossil Fuels
- BioFuels

### Fugitive Emissions

#### Common Fugitive Emissions

- Hydrofluorocarbons
- Hydrochlorofluorocarbons
- Chlorofluorocarbons
- Perfluorocarbons
- Sulfur Hexafluoride
- Methane

Enter your total emissions for each source

HFC-23	10	lbs
HFC-32	0	lbs
HFC-125	0	lbs
HFC-134a	0	lbs
HFC-143a	0	lbs
HFC-152a	0	lbs
HFC-227ea	0	lbs
HFC-236fa	0	lbs
HFC-245fa	0	lbs
HFC-43-10mee	0	lbs
HFC-365mfc	0	lbs

Describe the emissions source for HFCs (i.e., refrigeration, air conditioning, etc.):

refrigerant lost during maintenance

Color-coded navigation bar and running emissions total to track real-time progress

Quick "jump to" links to specific emission-subcategories

**Total Emissions FY 2008**  
**70** metric tons CO<sub>2</sub>e  
**Scope 1**  
 Combustion  
 ● Stationary Combustion 0.20  
 ● Mobile Combustion 17.10  
 Fugitive Emissions  
 ● **Common Fugitive Emissions 53.07**  
 Hydrofluorocarbons  
 Hydrochlorofluorocarbons  
 Chlorofluorocarbons  
 Perfluorocarbons  
 Sulfur Hexafluoride  
 Methane  
 Nitrous Oxide  
 ● Uncommon Fugitive Emissions  
 ● Industrial Process Emissions  
 ● Wastewater Treatment  
 ● Landfills and Solid Waste Facilities  
**Scope 2**  
 Purchased Electricity  
 ● Building Energy  
 ● Data Center  
 ● IT Equipment

# Carbon Footprint Analyzer – Embedded Guidance

The screenshot displays the Carbon Footprint Analyzer interface. At the top, it shows 'Enterprise Profile > Scenarios List' and navigation tabs for 'Scope 1', 'Scope 2', 'Scope 3', 'Water', and 'GHG Report'. The current view is 'Fugitive Emissions > Common Fugitive Emissions' for 'Chlorofluorocarbons'. A table allows users to enter emissions in lbs for various CFC types (CFC-11, CFC-12, CFC-13, CFC-113, CFC-114, CFC-115). A tooltip provides technical details: 'Alias: Chloropentafluoroethane, Monochloropentafluoroethane, Molecular Formula: C2ClF5, CAS Number: 76-15-3'. A 'Technical Support Document' tooltip explains that CFCs are various gaseous compounds of carbon, hydrogen, chlorine, and fluorine. A summary panel on the right shows 'Total Emissions FY 2009' as 246 metric tons CO2e, with a breakdown for Scope 1 (246.23) and Scope 2. Callout boxes highlight 'Links to Reference Documentation', 'Embedded guidance on emissions categories and general instructions', and 'Embedded Tooltip definitions to guide the user'.

Enterprise Profile > Scenarios List

EO 13514 Section 9 Recommendations  
Analyzer Calculations and Assumptions

Scope 1 | Scope 2 | Scope 3 | Water | GHG Report

Fugitive Emissions > Common Fugitive Emissions

### Chlorofluorocarbons

Enter your total Chlorofluorocarbon (CFC) emissions in lbs:

CFC-11	33	lbs
CFC-12	0	lbs
CFC-13	0	lbs
CFC-113	0	lbs
CFC-114	0	lbs
CFC-115	0	lbs

Describe: Alias: Chloropentafluoroethane, Monochloropentafluoroethane, Molecular Formula: C2ClF5, CAS Number: 76-15-3

refrigerant lost during installation

Technical Support Document

Chlorofluorocarbons (CFCs) are any of various gaseous compounds of carbon, hydrogen, chlorine, and fluorine, used as refrigerants, aerosol propellants, solvents, and in foam.

Total Emissions FY 2009

246 metric tons CO2e

Scope 1

- Combustion
  - Stationary Combustion
  - Mobile Combustion
- Fugitive Emissions
  - 246.23
  - Hydrofluorocarbons
  - Hydrochlorofluorocarbons
  - Chlorofluorocarbons
  - Perfluorocarbons
  - Sulfur Hexafluoride
  - Methane
  - Nitrous Oxide

Scope 2

- Purchased Electricity
  - Building Energy
  - Data Center

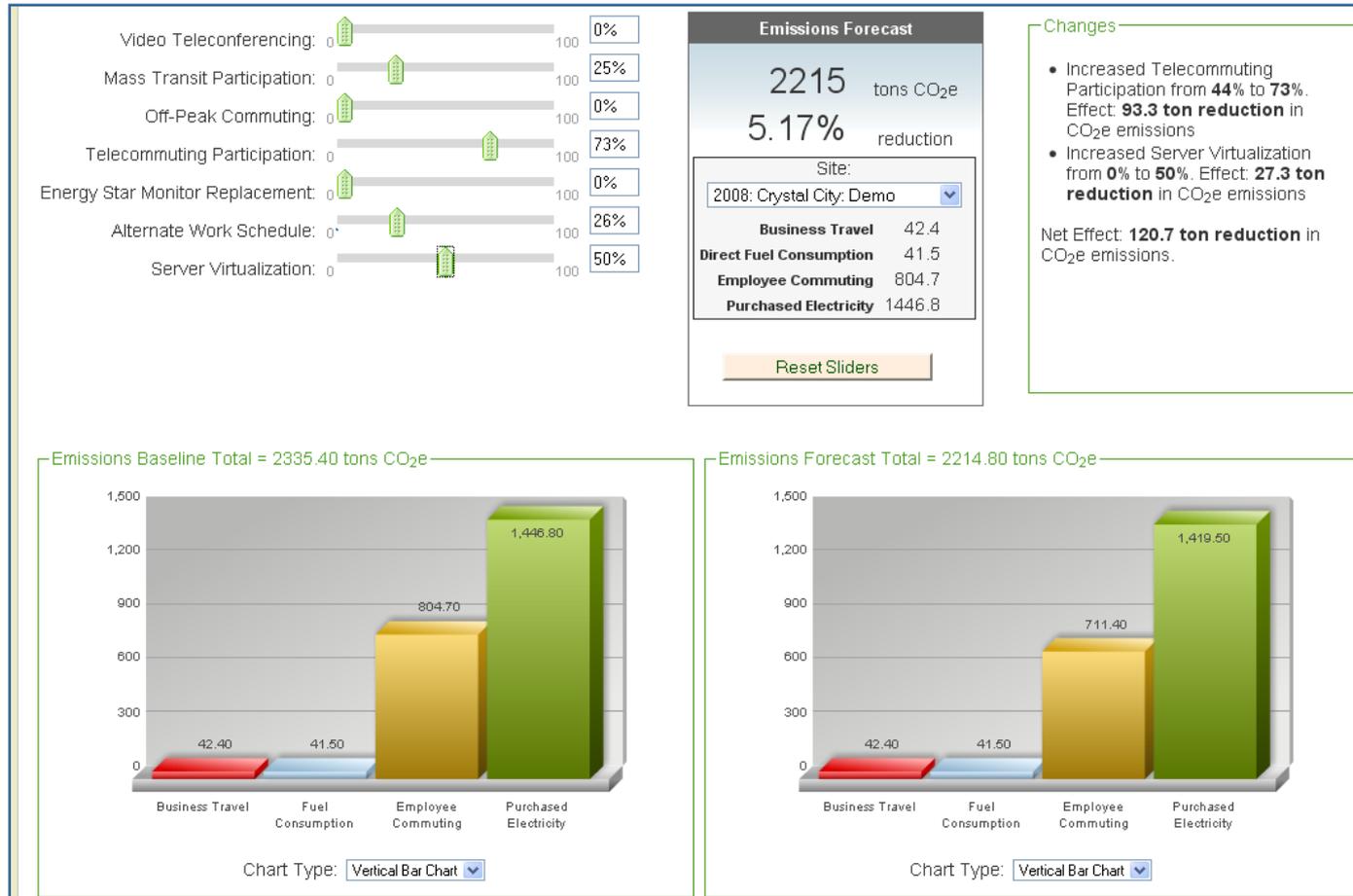
Links to Reference Documentation

Embedded guidance on emissions categories and general instructions

Embedded Tooltip definitions to guide the user

# Senior Management Dashboard

- Easy way for senior managers to visualize Agency GHG emissions
- “Sliders” let you see impact of using different technologies (*server virtualization*) or business processes (*telework*) to reduce footprint



# Scope 3 Commuting Survey

- Detailed commuting survey
- You can launch survey through the tool
- Obtain data needed to calculate Scope 3 employee commuting emissions

GSA Carbon Footprint and Green Procurement Tool get started | enterprise tools | 2\_green, sign out

**New Employee Survey**

Enterprise Profile | Analyzer | Dashboard | Reports | Carbon Profile Map | ROI Calculator | **Employee Survey**

**Create Survey**

Survey Title:

Survey Scope:

Upload List of Invited Survey Participants (.txt file format - one email per line):

Survey Start Date and End Date:

Reporting Fiscal Year:

**All Sites** [Print Report](#)

Survey Span: 2009-04-14 to 2009-05-01

**Survey Metrics**

Survey Summary:	Total Survey Users	Surveys Completed	Percent Completion
	306	154	50.33

**Commute Metrics**

Telecommuters: 48.05%

Contractors: 5.84%

Alternate Work Schedule: 52.00%

Peak Travelers: 87.66%

**To Work Commute Type:**

Car	Bike/Walk	Metro	Train	Bus
114	4	32	7	16

**From Work Commute Type:**

Car	Bike/Walk	Metro	Train	Bus
112	5	33	7	17

**To Work Commute**

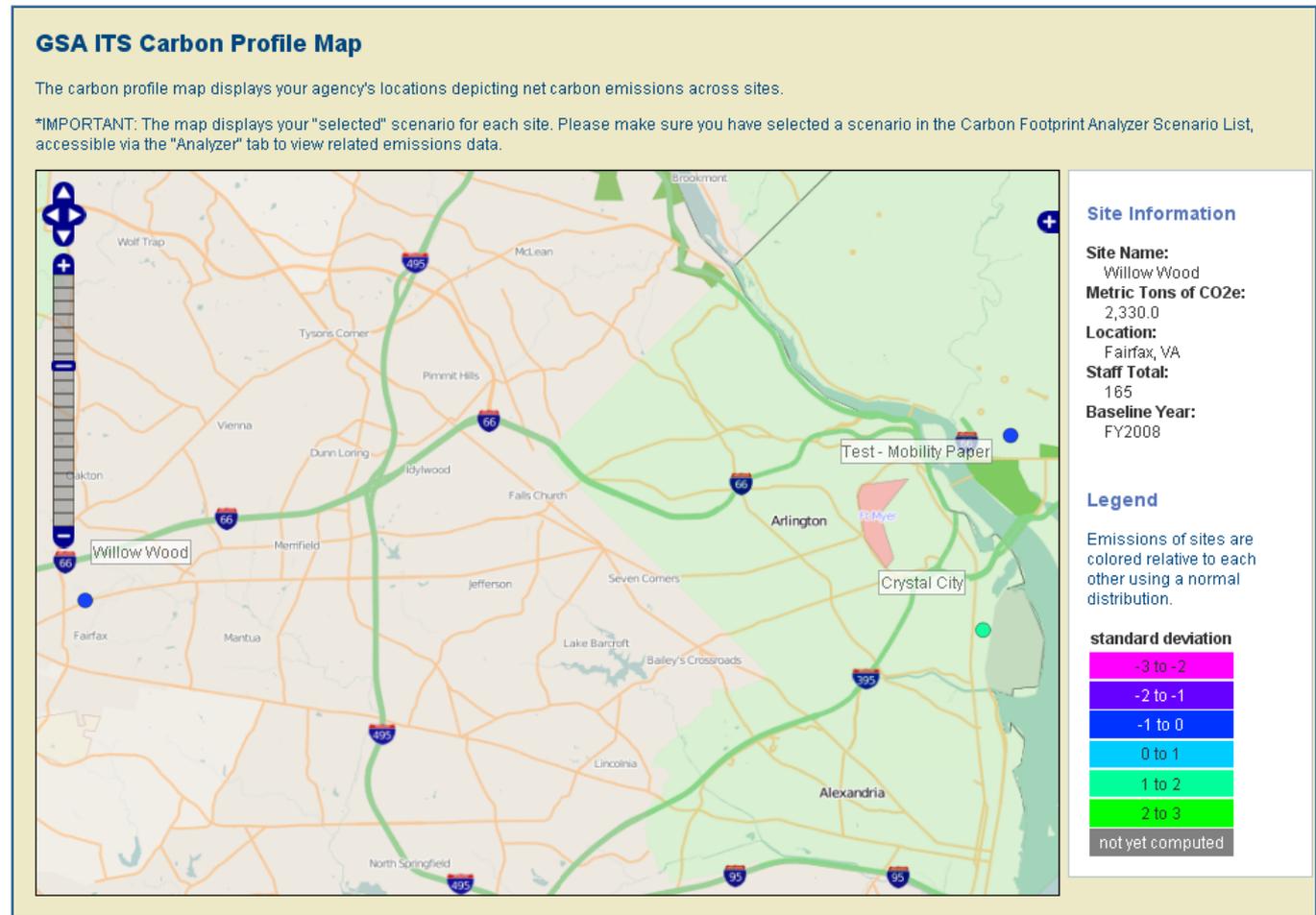
Car, 85.62  
Bus, 0.20  
Train, 4.02  
Metro, 18.39  
Bike/Walk, 2.30

**From Work Commute**

Car, 64.37  
Bus, 9.77  
Train, 4.02  
Metro, 18.97  
Bike/Walk, 2.87

# Agency Facilities GIS Map

- Facilities that you input show up on the map
- Rollover facilities to view emissions
- Color coding compares emissions across sites



# Return on Investment Calculator

- Built-In ROI Calculator
- Annual Savings, Ten Year Savings, ROI, and Payback are calculated for common green investment types

**ROI Calculator**

**Interior Lighting Investments**

Investment Name	Quantity	Initial Cost (dollars)	Annual Savings		Ten-Year Savings		ROI and Payback	
			Cost Savings (dollars/year)	CO2 Reduction (MT/year)	Cost Savings (dollars)	CO2 Reduction (MT)	Ten Year ROI (percent)	Payback (years)
Compact Fluorescent (25W)	<input type="text" value="1000"/>	\$3,500.00	\$5,616.78	29.65	\$56,167.80	296.51	1,504.79%	0.62
Compact Fluorescent (32W)	<input type="text" value="0"/>	\$0.00	\$0.00	0.00	\$0.00	0.00	0.00%	0.00
LED Exit Sign	<input type="text" value="0"/>	\$0.00	\$0.00	0.00	\$0.00	0.00	0.00%	0.00
<b>Totals:</b>		\$3,500.00	\$5,616.78	29.65	\$52,667.80	296.51	1,504.79%	0.62

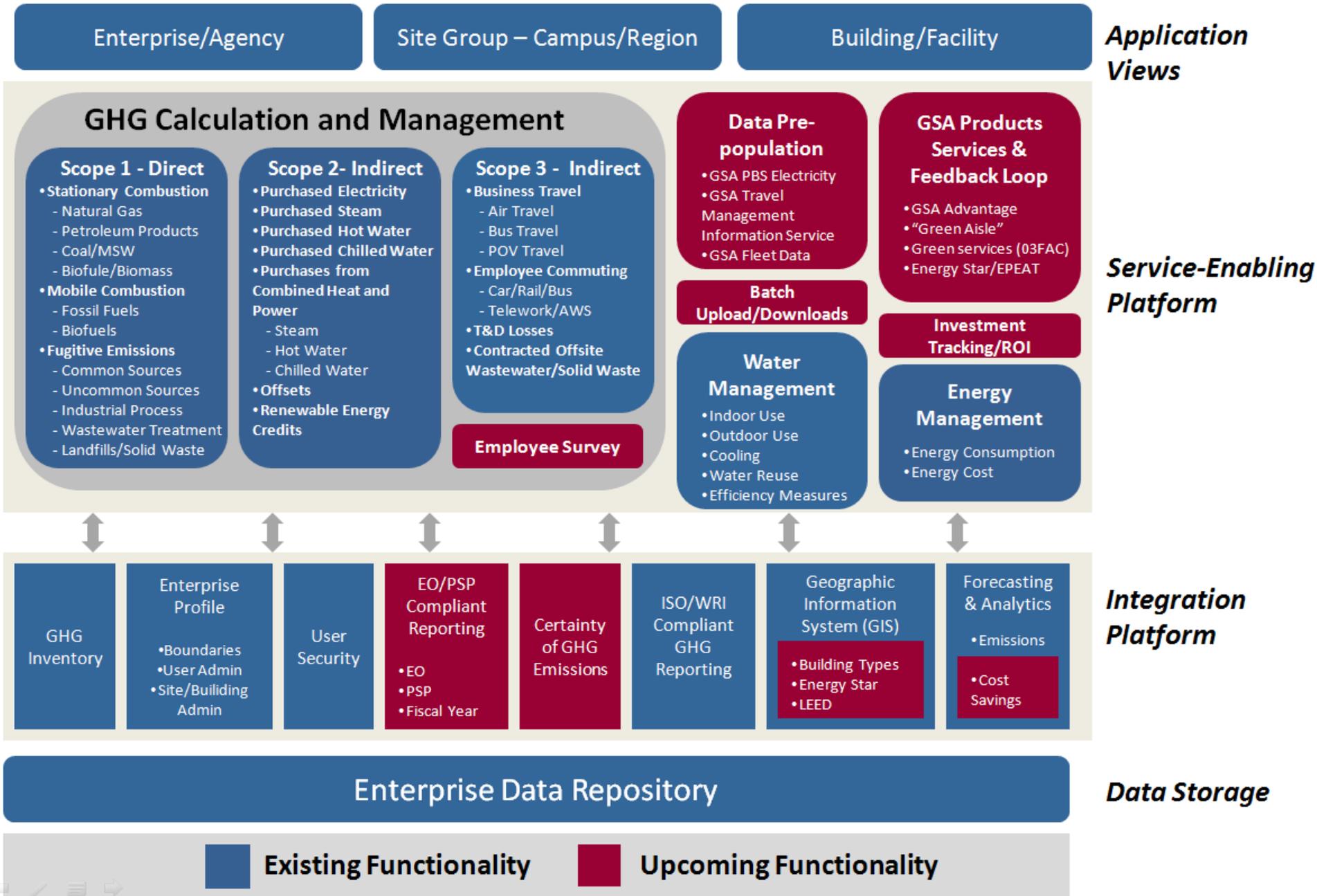
**Exterior Lighting Investments**

Investment Name	Quantity	Initial Cost (dollars)	Annual Savings		Ten-Year Savings		ROI and Payback	
			Cost Savings (dollars/year)	CO2 Reduction (MT/year)	Cost Savings (dollars)	CO2 Reduction (MT)	Ten Year ROI (percent)	Payback (years)
Metal Halide High Eff. pulse-start	<input type="text" value="0"/>	\$0.00	\$0.00	0.00	\$0.00	0.00	0.00%	0.00
Six 40W twin-tube, electronic ballast, 1.04 BF	<input type="text" value="0"/>	\$0.00	\$0.00	0.00	\$0.00	0.00	0.00%	0.00
Four 55W twintube, electronic ballast, 1.00 BF	<input type="text" value="0"/>	\$0.00	\$0.00	0.00	\$0.00	0.00	0.00%	0.00
Four 54W highoutput, electronic ballast, 1.00 BF	<input type="text" value="0"/>	\$0.00	\$0.00	0.00	\$0.00	0.00	0.00%	0.00
<b>Totals:</b>		\$0.00	\$0.00	0.00	\$0.00	0.00	0.00%	0.00

**Solar Power Investments**

Investment Name	Quantity	Initial Cost (dollars)	Annual Savings		Ten-Year Savings		ROI and Payback	
			Cost Savings (dollars/year)	CO2 Reduction (MT/year)	Cost Savings (dollars)	CO2 Reduction (MT)	Ten Year ROI (percent)	Payback (years)
Photovoltaic Solar Panel (75W)	<input type="text" value="0"/>	\$0.00	\$0.00	0.00	\$0.00	0.00	0.00%	0.00
Photovoltaic Solar Panel (2000W)	<input type="text" value="0"/>	\$0.00	\$0.00	0.00	\$0.00	0.00	0.00%	0.00

# GSA Carbon Footprint Tool – Architecture Overview



# Agency Account Management

Two (2) Account Types:

Agency users tasked with entering inventory data serves as an **Agency User**

- Enters GHG Inventory Data (Add/Edit/Delete Scenarios)

- Run Forecasting Methods, Calculate ROI, and View GIS Map

- Run/View/Download Reports

- Submit Tool Feedback

SSO or Agency Designee serves as the **Agency Account Administrator**

- SSO assigns agency account administrator(s) for their agency

- Has all the permissions of an Agency User, plus:

  - Selects/controls data to rollup to the agency level

  - Creates and manages site information for their agency

  - Creates and manages users for their agency

Individuals sharing both data entry and account management responsibilities will be set up as an **Agency Account Administrator**.

# To Officially Register Your Agency

## Register Your Agency

Contact: carbonfootprint@gsa.gov

Jennifer Hazelman,

jennifer.hazelman@gsa.gov

Approval will be required by your agency's Senior Sustainability Officer (SSO)

To gain access to the tool for previewing, go to <https://www.carbonfootprint.gsa.gov>

# **Energy Services on Schedule 03FAC Facilities Maintenance & Management**

**[www.gsa.gov/energyservices](http://www.gsa.gov/energyservices)**

# Energy Consulting

- Greenhouse Gas
  - Measurement, Management and Tracking
  - Carbon Footprint Analysis
- Studies, Analysis, Benchmarking and Reporting
  - Strategic Sustainability Performance Planning
- High Performance Sustainable Buildings
  - LEED, Green Globes and Energy Star
- Miscellaneous Consulting
  - Obtaining Alternative Financing for Energy Projects
  - Obtaining renewable energy credits/certificates

# Energy Management Planning & Strategies

Comprehensive Energy Management Solution used for energy retrofits and renewable energy projects

- Consulting/Auditing/Energy Management Solutions
- Concept Development and Requirements Analysis
- Implementation and Change Management
- Measurement and Verification

# Training on Energy Management

- Reducing energy consumption
- Mitigating risk with energy systems
- Operational assistance
- Building Efficiency Certification

## Metering Services

- Install meters and software to track real time energy consumption data of a facility, building or equipment
- Gas, electric, steam and water

# Energy Program Support Services

- Bill auditing and correction
- Bill consolidation and allocation of costs
- Preparation of energy project statements of work

# Building Commissioning Services

- Commissioning, re-commissioning and retro-commissioning services
- Ensures a building is designed and operating in the optimal energy efficient manner

# Energy Audit Services

- Audits ranging from Level 1, 2 and 3
- Energy analysis, data collection, benchmarking and the identification of energy conservation measures

# Resource Efficiency Management

- Onsite energy manager for building or facilities
- Management of energy program, review of energy choices, current operations, equipment, energy purchasing patterns, and rebates and incentives

# Water Conservation

- Reduction of potable, industrial, landscaping & agricultural water consumption
- Water reuse strategies & recycling
- Storm water runoff, property hydrology maintenance & restoration
- Water audits, water balance, & water system analysis



# Innovations in Energy

- Renewable Energy Solutions
  - Turn Key solutions - Cradle to Grave
  - Feasibility Studies and Site Assessments
  - Solar Energy
  - Wind Power
  - Hydropower
  - Biomass Conversion
  - Geothermal



# Comprehensive Professional Energy Services Blanket Purchase Agreement

- Awarded to 20 Energy Services Companies on Schedule 03FAC – Facilities Maintenance and Management
- Program Manager -  
Angela Lehman  
703.605.9541  
Angela.Lehman@gsa.gov
- [www.gsa.gov/EnergyServicesBPA](http://www.gsa.gov/EnergyServicesBPA)

# Points of Contact

- GSA Carbon Footprint Tool -  
816.510.4570  
Jennifer.Hazelman@gsa.gov
- Energy Services –  
816.926.5548  
Timothy.Benoit@gsa.gov

