



Federal GHG Reporting Tool

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- Where we are on the path forward
- Federal agency and FEMP responsibilities
- Electronic Accounting and Reporting Capability
 - GHG and Sustainability Data Report, Version 1.0/
Reporting Portal

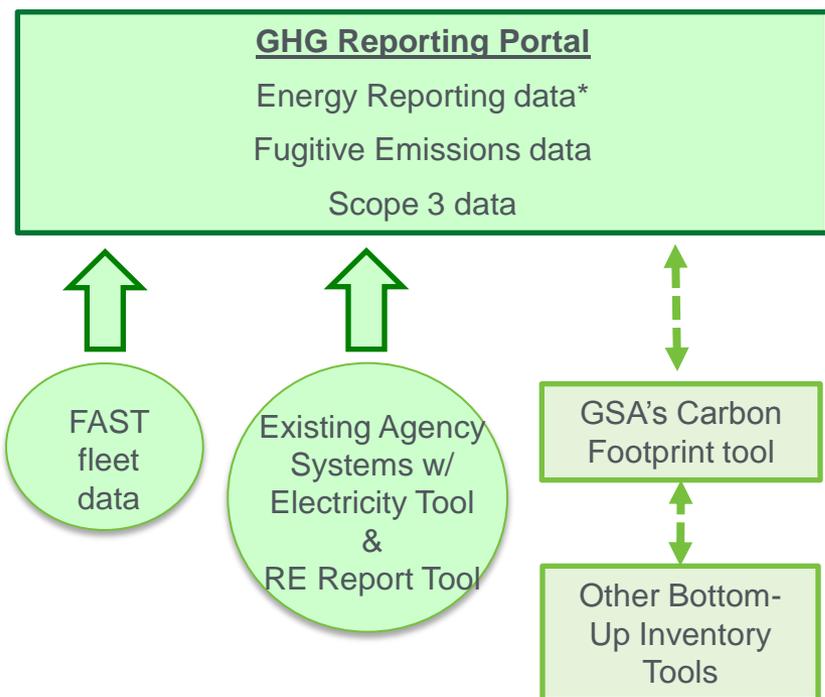
The mission of the Federal Energy Management Program is to facilitate the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the Nation's energy security and environmental stewardship.

- White House Council on Environmental Quality released the *Federal Greenhouse Gas Accounting and Reporting Guidance and Technical Support Document (TSD)* on October 6, 2010
 - <http://www.whitehouse.gov/administration/eop/ceq/sustainability>
- DOE/FEMP coordinated E.O. 13514 Section 9 reporting with related reporting requirements (e.g., energy reduction, fleets, renewable energy, water consumption, etc.)
- DOE/FEMP released of consolidated *Annual GHG and Sustainability Data Report, Version 1.0* on October 6, 2010
 - <http://www.fedcenter.gov/programs/greenhouse/inventoryreporting/>
- Aligning portal inputs with the outputs of GSA's bottom-up Carbon Footprint Tool for compiling monthly, facility-level data
 - <https://www.carbonfootprint.gsa.gov/>

Goal: Establish consistent calculation methodologies, work with agencies to improve accuracy over time, develop complementary reporting structures

Agency responsibilities	<ul style="list-style-type: none">➤ Prepare inventories for scopes 1, 2, and certain 3 emissions<ul style="list-style-type: none">• Refined 2008 baseline inventory for GHG target emissions (no penalty for proactive use of renewable energy)• 2009 GHG inventory reporting is optional (but useful)• 2010 comprehensive inventory due at the end of January• Report in native units at top-tier agency level➤ Select and deploy “bottom-up” tools and processes➤ Compile data throughout agency-wide hierarchy➤ Implement quality assurance procedures
DOE/FEMP responsibilities	<ul style="list-style-type: none">➤ Develop electronic reporting capability (portal) to receive data<ul style="list-style-type: none">• Embedded with CEQ TSD-consistent factors for Btu, emissions, GWPs➤ Update formulas and emission factors➤ Work with agencies and experts to evolve Guidance<ul style="list-style-type: none">• eg., leased assets, offsets, improved methodologies, etc.➤ Review submitted data and follow up to clarify inconsistencies➤ Ensure compatibility with and accommodate prior reporting requirements

FEMP has developed a consolidated workbook that will allow agencies to electronically submit their annual inventories.



GHG Inventory by:

Scope 1

- Stationary combustion
- Fleet vehicles
- Process emissions
- Fugitive emissions
- **Biogenic CO₂ emissions (not part of reduction goal)**

Scope 2

- Purchased electricity
- Purchased steam
- Purchased hot water
- Purchased chilled water
- RECs

Scope 3

- Business air/ground travel
- T&D losses from electricity
- Contracted Solid Waste
- Contracted Wastewater
- Employee Commuting

Salient features of the Portal:

- **GHG Reporting will be combined with existing FEMP Annual Energy Reporting.**
- **Portal will include calculation functionality that will work with minimum required data entered by agencies. However, agencies are responsible for “rolling up” activity level data to HQ.**

**Need to know electricity by eGrid region for scope 2 emissions*

The GHG/Sustainability Data Report, Version 1.0 can be found at
<http://www.fedcenter.gov/programs/greenhouse/inventoryreporting/>

- For the purpose of measuring progress toward the goals established under Executive Order 13514, provides electronic reporting capability for the Federal agency compiled:
 - Comprehensive GHG inventory for fiscal year 2010
 - Base-year 2008 GHG inventory
- Collects agency-aggregated (top-tier Department/agency) data necessary for calculating scope 1, 2, and 3 GHG emissions
 - Commonly-used, native units of energy consumption and fugitive emissions
 - Activity data for estimating scope 3 indirect emissions
- Aligns with the Guidance/TSD and transparently incorporates methodologies and heat rate and GWP conversion factors
- Provides summation of calculated emissions as well as performance results for other sustainability goals (energy/water reduction, renewables use)
- Subsequent versions of Data Report to increase usability and functionality and if necessary, correct any errors
 - Incorporate impact of renewables into GHG results summary (coming soon)

- Facility energy intensity reduction goals (30% in 2015 vs. 2003) under 42 U.S.C. 8253(a),
- Renewable electricity use requirement (5% in 2010, 7.5% in 2013 and beyond) under 42 U.S.C. 15852,
- Water intensity reduction (26% in 2020 vs. 2007) and base year reporting for non-potable industrial, landscaping, and agricultural use under E.O. 13514
- Facility metering requirements under 42 U.S.C. 8253(e),
- Compliance with Federal energy efficiency standards for new construction under 10 CFR Parts 433, 434, and 435, 72 FR 72565, and
- Energy efficiency and renewable energy investment information for fiscal year 2010
- Accepts outputs from the Federal Automotive Statistical Tool (FAST) to calculate the GHG emissions from Federal covered fleet fuel use.

- Purchased Electricity Sub-Regional Reporting Tool (Zip code based)
 - If needed or agency can directly input MWH into regions
- Renewable Energy Reporting
 - Generated and purchased renewables
 - Calculates offsets; scope 1 CH₄, N₂O, and biogenic CO₂ from biomass
- Energy/Fugitive Emissions/Activity Data for Scope 3 Estimates
 - Stationary fuel combustion
 - Mobile fuel combustion (FAST and non-fleet)
 - GHGs subject to goals vs. excluded (tactical, law enforcement, etc.)
 - Fugitive emissions
 - Scope 2 purchased electricity (linked to zip code tool)
 - Scope 2 purchased steam, chilled water
 - Scope 3 categories
- Non-GHG related sustainability elements workbook
 - Water consumption
 - Metering progress
 - Funding/project investment totals
 - Efficiency standards compliance for new buildings

GHG and Sustainability Data Report: Workbook Organization

Electricity		
1.1	Electricity Instructions	Guidance
1.2	Goal Building Domestic Electricity	Data Input
1.3	Goal Building Domestic Electricity (Non-Target GHG)	Data Input
1.4	Goal Building Foreign Electricity	Data Input
1.5	Excluded Building Domestic Electricity	Data Input
1.6	Excluded Building Domestic Electricity (Non-Target GHG)	Data Input
1.7	Excluded Building Foreign Electricity	Data Input
1.8	Electricity Summary & Cost Data	Data Input
1.9	Alternative Electricity Methodology (direct entry)	Data Input
1.10	Electricity Summary by Region	Reporting
Renewable Energy		
2.1	Renewable Energy Instructions	Guidance
2.2	Renewable Energy Data	Data Input
2.3	Renewable Energy Emissions and Summary	Reporting
Inputs/Calcs for scopes 1, 2 and 3		
3.1	Direct Fuel Use and GHGs Instructions	Guidance
3.2	Scope 1: Goal Subject and Excluded Buildings Energy	Data Input
3.3	Scope 1: Vehicles and Equipment Energy	Data Input
3.4	Scope 1: FAST Mobile (Vehicle Fleet) Energy	Data Input
3.5	Scope 1: Mixed Refrigerants	Data Input
3.6	Scope 1: Fugitive F-gases	Data Input
3.7	Scope 1: Wastewater Treatment Plant	Data Input
3.8	Scope 1: Fugitive Landfill Gases	Data Input
3.9	Scope 1: Process Emissions	Data Input

3.10	Scope 2: Steam and Hot Water	Data Input
3.11	Scope 2: Chilled Water	Data Input
3.12	Scope 2: Combined Heat and Power (CHP)	Data Input
Scope 3: Transmission and Distribution Losses		
3.13	Scope 3: Transmission and Distribution Losses	Data Input
3.14	Scope 3: Air Business Travel	Data Input
3.15	Scope 3: Ground Business Travel	Data Input
3.16	Scope 3: Commuter Travel	Data Input
3.17	Scope 3: Contracted Wastewater Treatment	Data Input
3.18	Scope 3: Contracted Waste Disposal	Data Input
Other Reporting		
4.1	Other Reporting Instructions	Guidance
4.2	New Building Design	Data Input
4.3	Source Energy Savings Credit	Data Input
4.4	FY2010 Data Report (Water, Square Footage, Project Financing and Training)	Data Input
4.5	Performance Summary	Reporting
4.6	GHG Results Summary	Reference
Appendices		
A.	Emissions factors by zip code data	Reference
B.	Foreign country emissions data	Reference
C.	Fuel specific emissions factors	Reference
D.	Emissions factor key	Reference
E.	Global Warming Potential Key	Reference
F.	GGE Conversion	Reference
G.	Energy Upload Sheet	Reporting
H.	GHG Upload Sheet	Reporting

- Assist agencies with grouping electricity data under eGRID sub-regions and linking the location of electricity use to underlying generation characteristics
 - For reporting of grid-provided, non-renewable electricity
 - Electricity use from renewable sources and REC purchases will be reported separately
- Tool will take electricity and associated zip code data (from electricity bills or centralized data systems) and use embedded eGRID emission factors to calculate GHG emissions
- Assist agencies in developing their GHG inventories and in meeting their reporting requirements
 - FY 2008 base year inventory
 - FY 2010 comprehensive inventory
- **Agencies can skip the use of this tool if they have capability to report by eGRID region.**

Format for Sub-Regional Reporting for Electricity

Sub-Region	Abbreviation	Electricity (MWh)				
		Goal Subject	Excluded	Goal Subject	Excluded	Total
		GHG Target	GHG Target	Non-Target GHG	Non-Target GHG	
ASCC Alaska Grid	AKGD	488,264.7	66,642.1	0.0	0.0	554,906.8
ASCC Miscellaneous	AKMS	317,372.0	43,317.4	0.0	0.0	360,689.4
ERCOT All	ERCT	3,182,962.1	434,435.1	0.0	0.0	3,617,397.3
FRCC All	FRCC	1,464,794.0	199,926.4	0.0	0.0	1,664,720.4
HICC Miscellaneous	HIMS	463,851.4	63,310.0	0.0	0.0	527,161.5
HICC Oahu	HIOA	1,105,842.6	150,933.9	0.0	0.0	1,256,776.5
MRO East	MROE	1,711,483.9	233,596.5	0.0	0.0	1,945,080.4
MRO West	MROW	1,397,238.1	190,705.8	0.0	0.0	1,587,943.9
NPCC Long Island	NYLI	244,132.3	33,321.1	0.0	0.0	277,453.4
NPCC New England	NEWNE	1,376,147.4	187,827.2	0.0	0.0	1,563,974.6
NPCC NYC/Westchester	NYCW	43,943.8	5,997.8	0.0	0.0	49,941.6
NPCC Upstate NY	NYUP	1,464,794.0	199,926.4	0.0	0.0	1,664,720.4
RFC East	RFCE	4,106,306.0	560,460.2	0.0	0.0	4,666,766.2
RFC Michigan	RFCM	1,464,794.0	199,926.4	0.0	0.0	1,664,720.4
RFC West	RFCW	2,695,221.0	367,864.5	0.0	0.0	3,063,085.5
SERC Midwest	SRMW	976,529.4	133,284.2	0.0	0.0	1,109,813.6
SERC Mississippi Valley	SRMV	2,441,323.4	333,210.6	0.0	0.0	2,774,534.0
SERC South	SRSO	1,220,661.7	166,605.3	0.0	0.0	1,387,267.0
SERC Tennessee Valley	SRTV	1,220,661.7	166,605.3	0.0	0.0	1,387,267.0
SERC Virginia/Carolina	SRVC	5,561,334.7	759,053.7	0.0	0.0	6,320,388.4
SPP North	SPNO	1,464,794.0	199,926.4	0.0	0.0	1,664,720.4
SPP South	SPSO	2,123,951.4	289,893.2	0.0	0.0	2,413,844.6
WECC California	CAMX	5,908,344.4	806,416.3	0.0	0.0	6,714,760.6
WECC Northwest	NWPP	2,109,303.4	287,893.9	0.0	0.0	2,397,197.4
WECC Rockies	RMPA	1,464,794.0	199,926.4	0.0	0.0	1,664,720.4
WECC Southwest	AZNM	2,808,747.1	383,359.4	0.0	0.0	3,192,106.4
U.S. Territories	U.S. Territories	0.0	0.0	0.0	0.0	0.0
Not Specified	N/A	0.0	0.0	0.0	0.0	0.0
Domestic Subtotal	N/A	48,827,592.8	6,664,365.2	0.0	0.0	55,491,957.9
Total	N/A	48,827,592.8	6,664,365.2	0.0	0.0	55,491,957.9

- Use Direct Entry Sheet if electricity use is already apportioned by eGRID sub-region
- Use Zip code tool if reporting non-domestic electricity use
- Can be used in combination (Direct Entry sheet for U.S. domestic only and Zip code tool sheet for foreign electricity use only)
- Expect to enhance usability/clarity in version update.

Renewable Energy Reporting: Calculated Results

GHG Emissions Results Summary



Energy Efficiency & Renewable Energy

Scope and Category	Total Quantity Emitted GHG Target Subject (MT CO2e)	Total Quantity Emitted GHG Target Excluded (MT CO2e)	Total Quantity Emitted International (MT CO2e)	Total Quantity Emitted (MT CO2e)	Total Quantity Emitted Biogenic CO2 (MT)
Scope 1: Stationary Combustion: EISA 2007 Goal Subject and Excluded Building Energy Consumption	0.0	0.0	0.0	0.0	0.0
Scope 1 Mobile Emissions: Vehicles and Equipment	0.0	0.0	0.0	0.0	0.0
Scope 1 Mobile Emissions: FAST	0.0	0.0	0.0	0.0	0.0
Scope 1 Fugitive Emissions: Fugitive Fluorinated Gases and Other Fugitive Emissions	0.0	0.0	0.0	0.0	
Scope 1 Fugitive Emissions: On-site Wastewater Treatment***	0.0			0.0	0.0
Scope 1 Fugitive Emissions: On-site Landfills and Municipal Solid Waste Facilities**	0.0			0.0	0.0
Scope 1: Industrial Process Emissions By Process	0.0	0.0	0.0	0.0	
Subtotal Scope 1	0.0	0.0	0.0	0.0	0.0
Scope 2: Purchased Electricity Consumption	0.0	0.0	0.0	0.0	0.0
Scope 2 Indirect Emissions: Purchased Steam and Hot Water (Includes Transmission and Distribution Losses)	0.0	0.0	0.0	0.0	0.0
Scope 2 Indirect Emissions: Purchased Chilled Water (Includes Transmission and Distribution Losses)	0.0	0.0	0.0	0.0	0.0
Scope 2: Indirect Emissions: Purchased CHP Electricity, Steam & Hot Water	0.0	0.0	0.0	0.0	
Subtotal Scope 2	0.0	0.0	0.0	0.0	0.0
Total Scope 1 & 2	0.0	0.0	0.0	0.0	0.0
Scope 3: Transmission and Distribution (T&D) Losses*	0.0	0.0		0.0	0.0
Scope 3: Federal Employee Business Air Travel**	0.0			0.0	
Scope 3: Federal Employee Business Ground Travel***	0.0			0.0	
Scope 3: Federal Employee Commuting***	0.0			0.0	
Scope 3: Contracted Wastewater Treatment***	0.0			0.0	0.0
Scope 3: Contracted Municipal Solid Waste Disposal***	0.0			0.0	0.0
Subtotal Scope 3	0.0	0.0	0.0	0.0	0.0
Grand Total	0.0	0.0	0.0	0.0	0.0

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