



Using EMS to Implement NASA's Sustainability Plan: A Center Perspective

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Presentation Overview

- About Goddard Space Flight Center (GSFC)
- GSFC's significant aspects & sustainability goals
- Challenges to integrating Executive Order & NASA sustainability goals into the EMS

GODDARD SPACE FLIGHT CENTER
ENVIRONMENT PROGRAM MANAGEMENT

ENVIRONMENT

WATER WATER

ENVIRONMENTAL PLANNING AIR WATER LAND WASTE

- Environmental Management System (EMS)
- Encroachment, Sustainability, and Emerging Contaminants
- Environmental Planning and Impact Assessment
- Air Quality
- Water Quality
- Drinking Water
- Oil Operations (Tanks)
- Natural Resources
- Environmental Compliance and Restoration (ECR) Program
- Hazardous Waste
- Reduce, Reuse, Recycle, Rebuy
- Affirmative Procurement and Green Purchasing

The Goddard Space Flight Center (GSFC) missions expand knowledge of the Earth and its environment, the solar system, and the universe. To maintain our nation's leadership in this endeavor, GSFC commits to conducting missions in a manner that promotes environmental stewardship.

WFF



WSTF



GSFC
Greenbelt



GISS



IV&V



NASA's Aspect Risk Analysis



P R O B A B I L I T Y	5	L	M	H	H	H
	4	L	M	M	H	H
	3	L	L	M	M	H
	2	L	L	M	M	M
	1	L	L	L	L	M
		1	2	3	4	5
		IMPACT/BENEFIT				

NASA EMS procedures require Centers to consider:

- The goals established within EO 13423 and EO 13514 in identifying significant aspects and developing objectives and targets.
- Establishing objectives and targets for all applicable goals in EO 13423 and EO 13514, even if they are not identified as significant aspects.



GSFC's Environmental Aspects



Goddard has adopted EO 13423 & 13514 goals as objectives and targets for significant aspects, when possible.

Aspect

Impact

Energy Consumption	—————→	Natural Resource Depletion
Greenhouse Gas Emissions	—————→	Air Quality & Climate Change
Hazardous Waste Generation	—————→	Waste Disposal
Solid Waste Generation	—————→	Landfill Space
Stormwater Discharges	—————→	Water Quality
Water Use	—————→	Natural Resource Depletion

Energy Consumption



Energy Pledge

In support of Energy Awareness, I pledge to curtail the unnecessary use of energy in Federal office space—especially when it is unoccupied.

I commit to being a good steward of taxpayer dollars and the environment by implementing low-cost and no-cost efficiency measures, and improving operating procedures. As a building owner, operator, or tenant, I will turn off all unnecessary office equipment, personal accessories, lighting, and space condition equipment (such as space heaters and fans) whenever possible. I further commit to encouraging others to take this pledge and join us in reducing energy use everywhere possible.



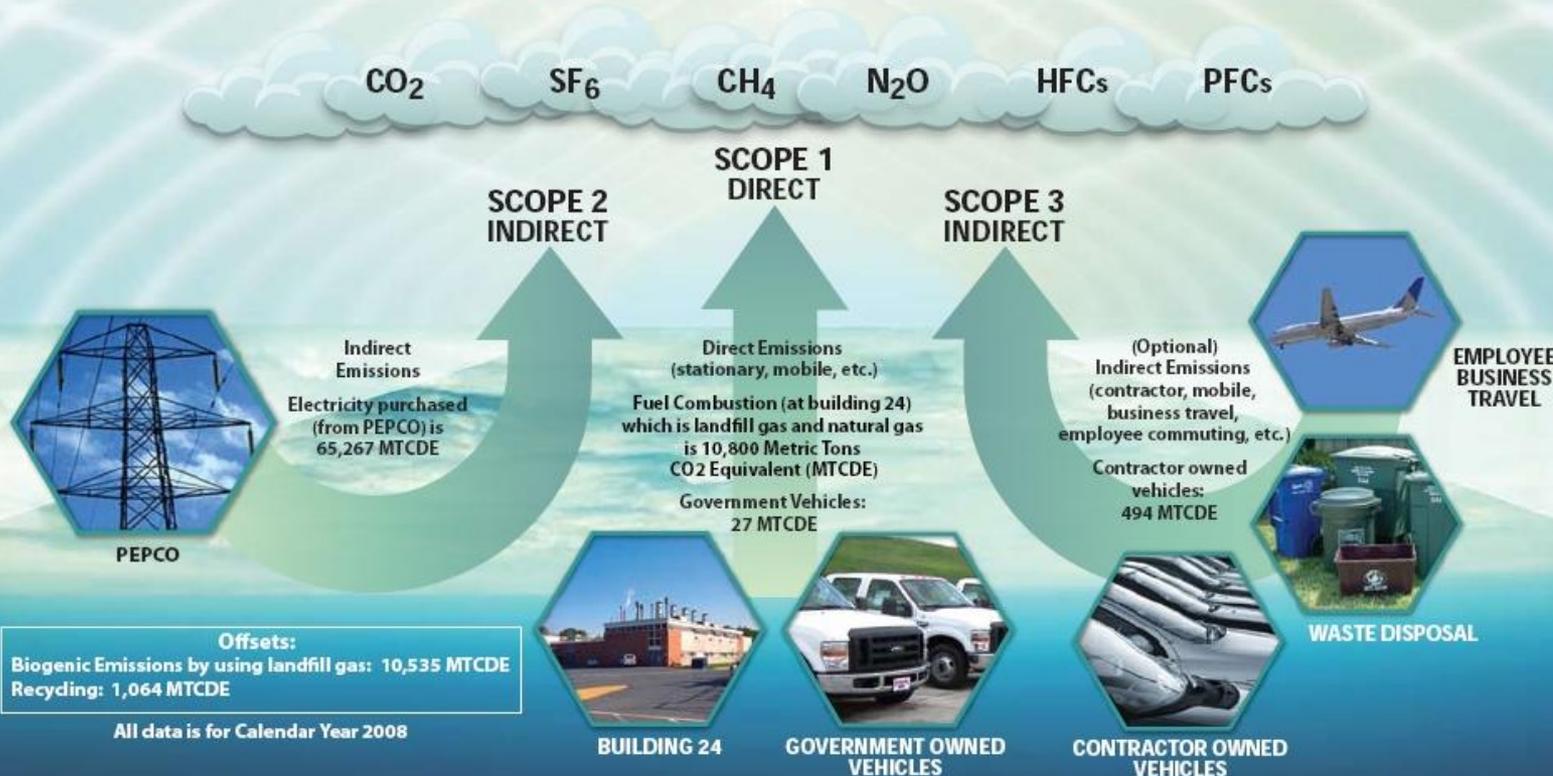
Have you signed the Energy Pledge? Everyone is an Energy Manager! Join these Energy Green Team members by making a pledge to do your part. You Have the Power!

Greenhouse Gas Emissions

National Aeronautics and Space Administration

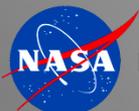


Goddard Space Flight Center's Greenhouse Gas Inventory



Source: WRI/WBCSD, The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard, Revised Edition, Chapter 4

www.nasa.gov



Hazardous Waste Generation



Solid Waste Generation

Also developing programs for diversion of Construction and Demolition (C&D) waste, per EO 13514.

NASA GSFC

Take the 50 by 15 Challenge

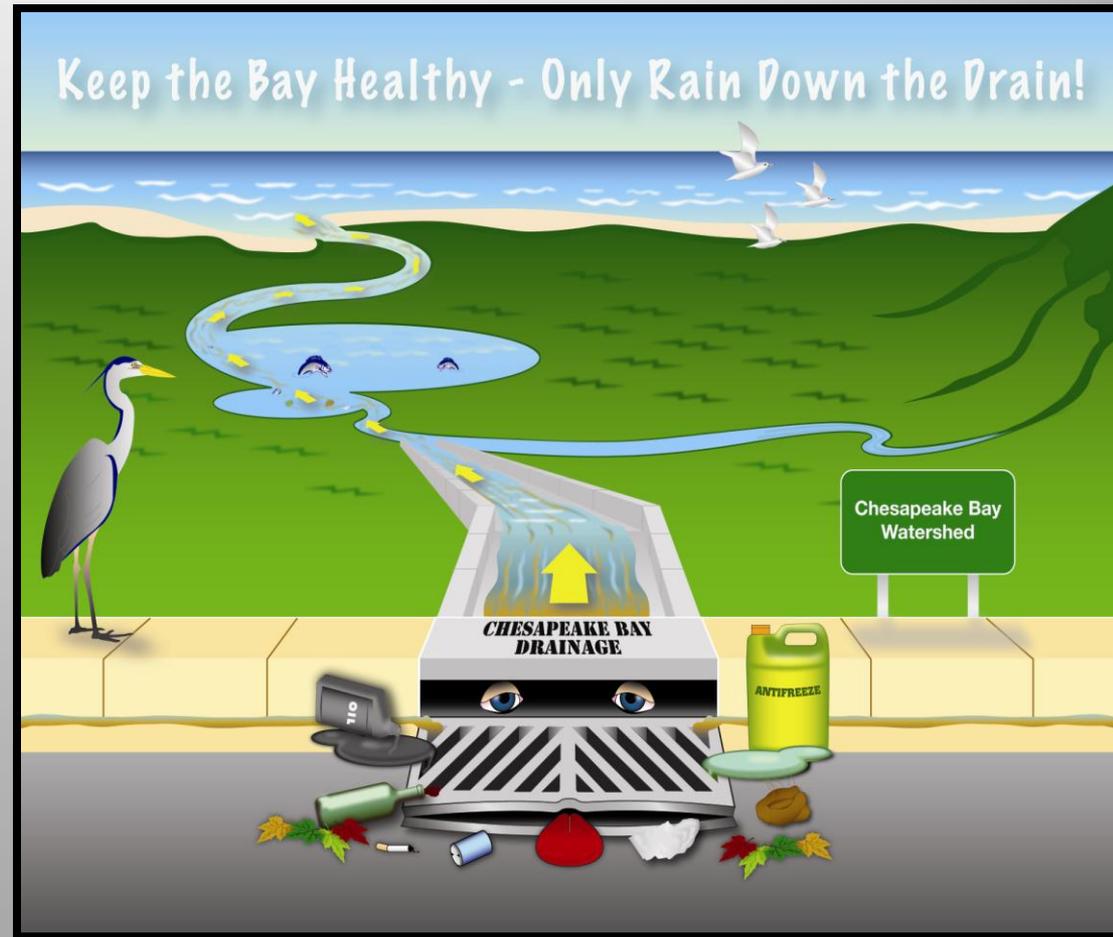
Recycle 50% of Waste by 2015

Becomes



Stormwater Discharges

- National Pollutant Discharge Elimination System (NPDES) Industrial Discharge Permit
- NPDES Small Municipal Storm Sewer System Permit
- Energy Independence and Security Act of 2007, Section 438
- EO 13508, Chesapeake Bay Protection and Restoration
- State stormwater management requirements
- And more!

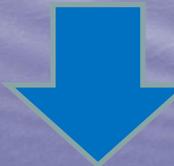




Water Use



Adopted EO 13514 goal for reducing potable water only.

 **26% by
2020**



What's Left?

- Fleet Management & Transportation
- High Performance Sustainable Buildings
- Sustainable Acquisition
- Electronic Stewardship & Data Centers





Challenges

- Addressing significant environmental aspects of Center activities, while also integrating sustainability goals for aspects not ranked as a high-priority (significant).
- Expand mission while meeting sustainability goals.
- Changing the mindset of “business as usual.”
- Getting the EMS out of the environmental office.
 - Collaboration, communication, and buy-in.
- Contracts and contractor involvement.



A Landsat mosaic of the Chesapeake Bay.



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<http://code250.gsfc.nasa.gov/environmental/>

Goddard Space Flight Center

EXPLORE