U.S. EPA

Latin American and Caribbean Regional Workshop

MRV of NAMAs as a
Key Element of National MRV Systems

March 6-8, 2014

Selected US EPA Activities on MRV

Monitoring	Reporting	Verification
GHG Inventory	Report to UNFCCC	Peer and public inventory review
Regulatory programs	Depends on program; could be facility level, product level, etc.	Federal government testing and auditing
Partnership mitigation programs	Annual Reports	Federal government auditing

Inventories and NAMAS

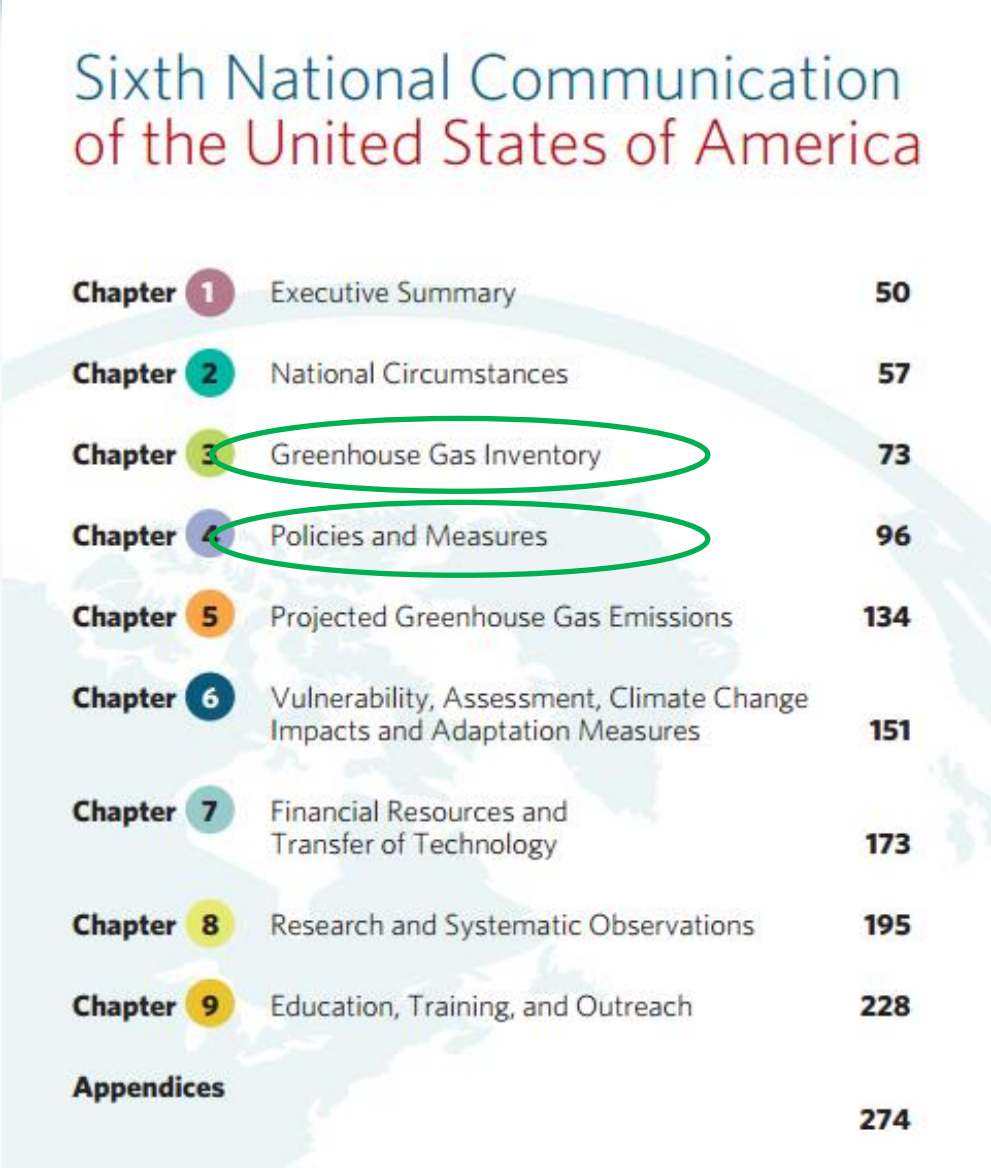
- Because inventories are aggregate, top down estimates, they have limited usefulness for demonstrating progress on individual NAMAs.

-- BUT --

- They are a useful tool to ensure you are capturing the collective impact of your NAMAs, and to assure that the impact of a NAMA that may cut across multiple inventory categories is not being double-counted.

How does the U.S. present its inventory and GHG policies?

- Annual inventory report submitted to UNFCCC since 1994
- National Communication, including discussion of GHG policies, every 4 years
- Biennial Report every 2 years
- Most recent NC and BR submitted Jan. 2014, reflecting 1990-2011 emission estimates



Sixth National Communication of the United States of America

U.S. National Greenhouse Gas Inventory Basics

- Interagency technical effort led by EPA
  - Data and input provided by other U.S. agencies: Energy, Agriculture, Forest Service, etc.
  - U.S. Department of State formally submits

- Multiple levels of verification

1) EPA and consultant review
2) Independent expert review
3) Public Review (30 days)

Before UNFCCC submission

4) International expert review

After UNFCCC submission

Selected mitigation actions from NC6 (Jan. 2014)

Name of Policy or Measure	Objective and/or Activity Affected	GHGs Affected	Types of Instrument	Status	Implementing Entities	Estimated Mitigation Impacts (Tg CO_2e)		
						2011	2015	2020
Transportation								
National Program for Light-Duty Vehicle GHG Emissions and CAFE Standards	Establishes corporate average fuel economy and GHG emission standards for new light-duty vehicles (LDVs) produced for sale in the U.S.	CO_2, HFCs	Regulatory	Implemented	DOT/EPA	35.0	92.0	236.0
Energy: Residential, Commercial, and Industrial End Use								
Appliance and Equipment Energy Efficiency Standards	Establish minimum energy conservation standards for more than 50 categories of appliances and equipment.	CO_2	Regulatory	Implemented	DOE	156.0	195.0	216.0
Waste Management/Waste								
Landfill Methane Outreach Program	Reduces GHG emissions at landfills by supporting the recovery and use of landfill gas for energy.	CH_4	Voluntary, Information	Implemented	EPA	15.8	14.3	15.7

Evaluating impact of policies

- **Regulatory policies:** codified in law. Regulation includes economic assessment, as well as GHG reduction projections. Laws are enforced by federal agencies.
  - Vehicle GHG emission standards: EPA tests the GHG performance of all vehicles sold in the US
  - Appliance and energy efficiency standards: DOE tests energy efficiency of more than 50 categories of appliances and equipment

- **Voluntary programs:** partnerships with private companies, who agree to submit annual progress reports
  - Landfill methane outreach program: information collected from industry is used to measure progress

Example: measuring progress at landfills

Inventory trend: top-down snapshot

- GHG emissions from landfills have decreased by 30 percent from 1990 to 2012.
- Decrease is due to a combination of measures: federal regulations requiring landfill gas combustion, voluntary programs encouraging energy recovery and use (NAMA), and federal and state incentives that promote renewable energy.

EPA's Landfill Methane Outreach Program (NAMA)

- Voluntary Partnership with landfills seeking to install waste-to-energy projects.
- In 2012, methane emissions were reduced by 6.3 MMTCO2e by LMOP partners as a result of 44 new projects/expansions.

Summary

- A high-quality national GHG inventory is an important foundation to identify sectors in which you might take mitigation actions.

- Mitigation activities require their own discrete monitoring, reporting and verification processes; a country can not rely upon its inventory alone to demonstrate progress on a NAMA.

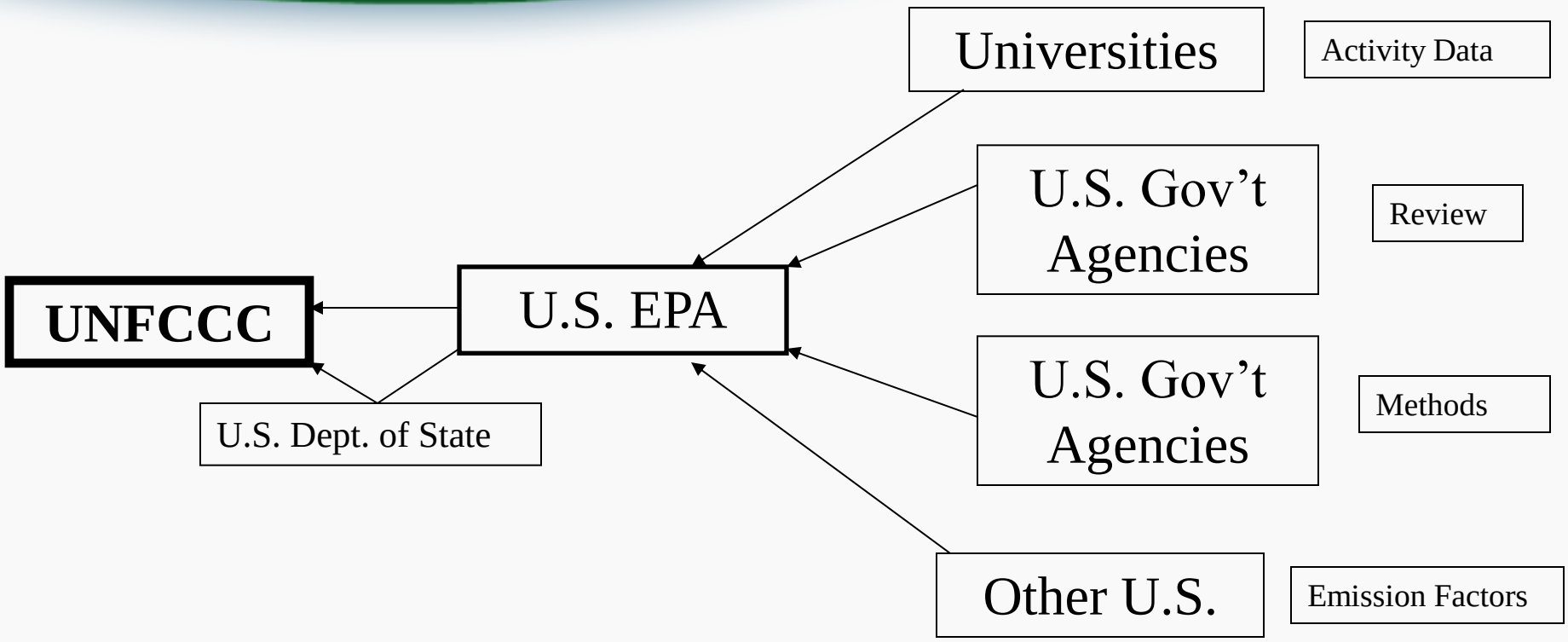
- However, inventories ARE useful to demonstrate economy-wide emission reductions, and to ensure that impact of a NAMA that may cut across multiple inventory categories is not being double-counted.

Thank you

- Cate Hight, Climate Change Division, US EPA
  - Hight.cate@epa.gov (+1 202 343 9230)
- US GHG Inventory
  - http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html
- US Climate Action Report (NC and BR)
  - http://www.state.gov/e/oes/rls/rpts/car6/index.htm?utm_content=bufferab672
- US EPA Climate Change Website
  - http://www.epa.gov/climatechange/
- Landfill Methane Outreach Program
  - http://www.epa.gov/lmop/

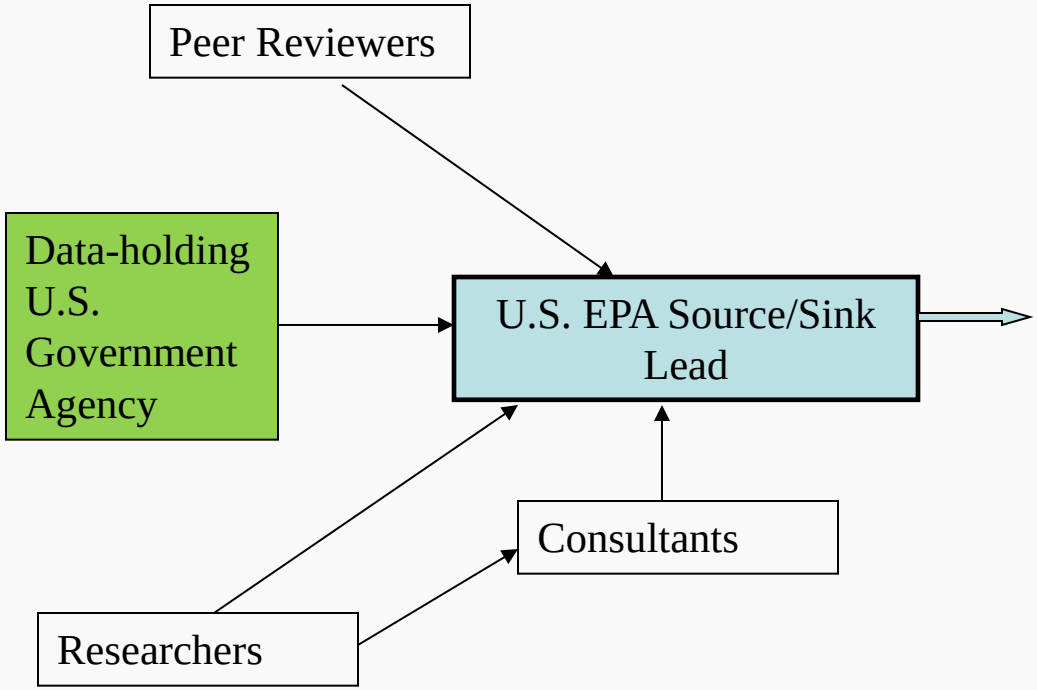
Additional Slides: The Institutional Arrangements for the U.S. GHG Inventory

U.S. National GHG Inventory Institutional Arrangements



- U.S. EPA has decentralized approach to preparing inventory
  - U.S. EPA inventory coordinator collects emission estimates from individual source leads (EPA staff)
    - Aggregates emissions, prepares inventory report, presents formal submission materials to U.S. Dept. of State, sends electronic submission to UNFCCC through on-line portal, archives each inventory submission

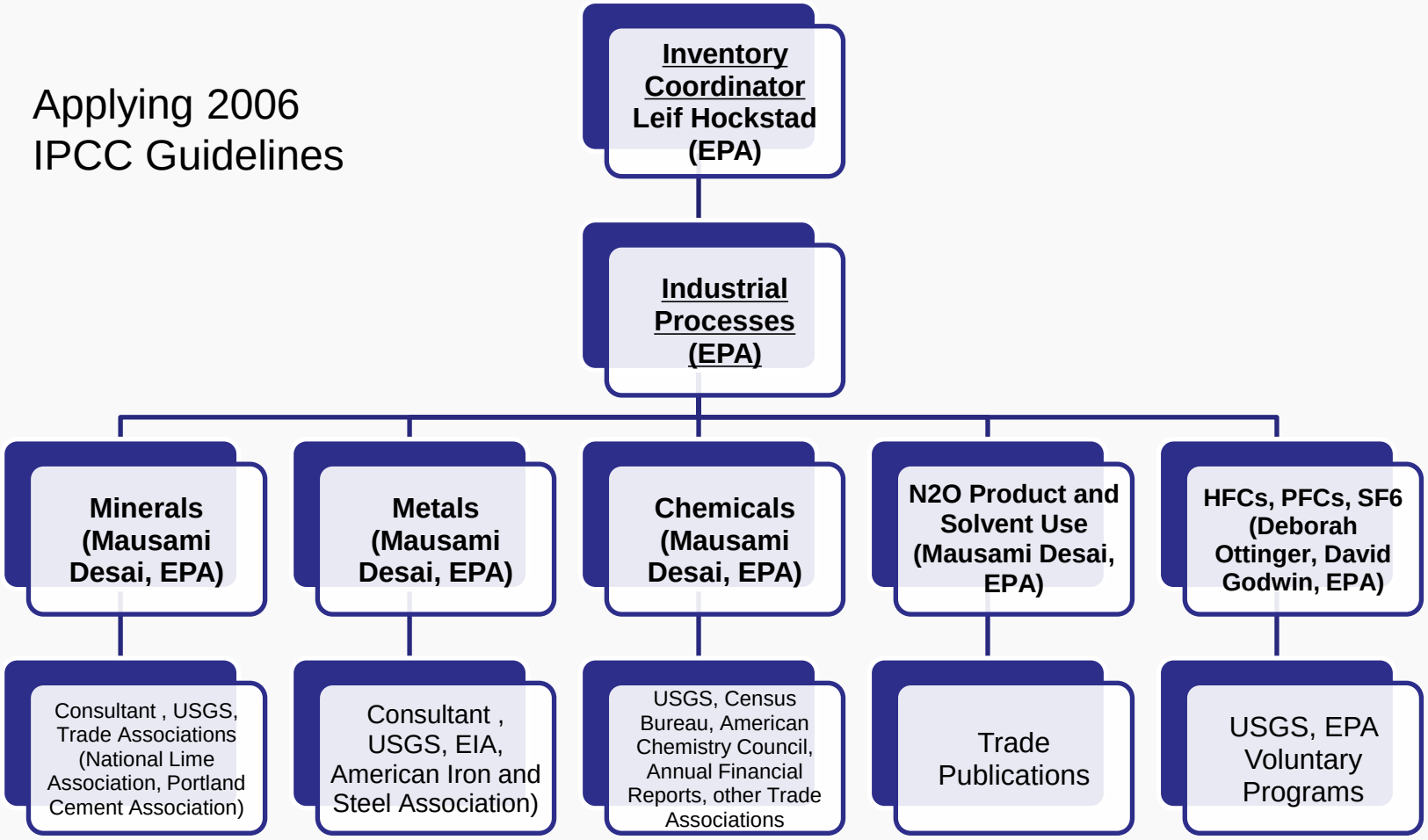
Roles: U.S. EPA Source Category Leads



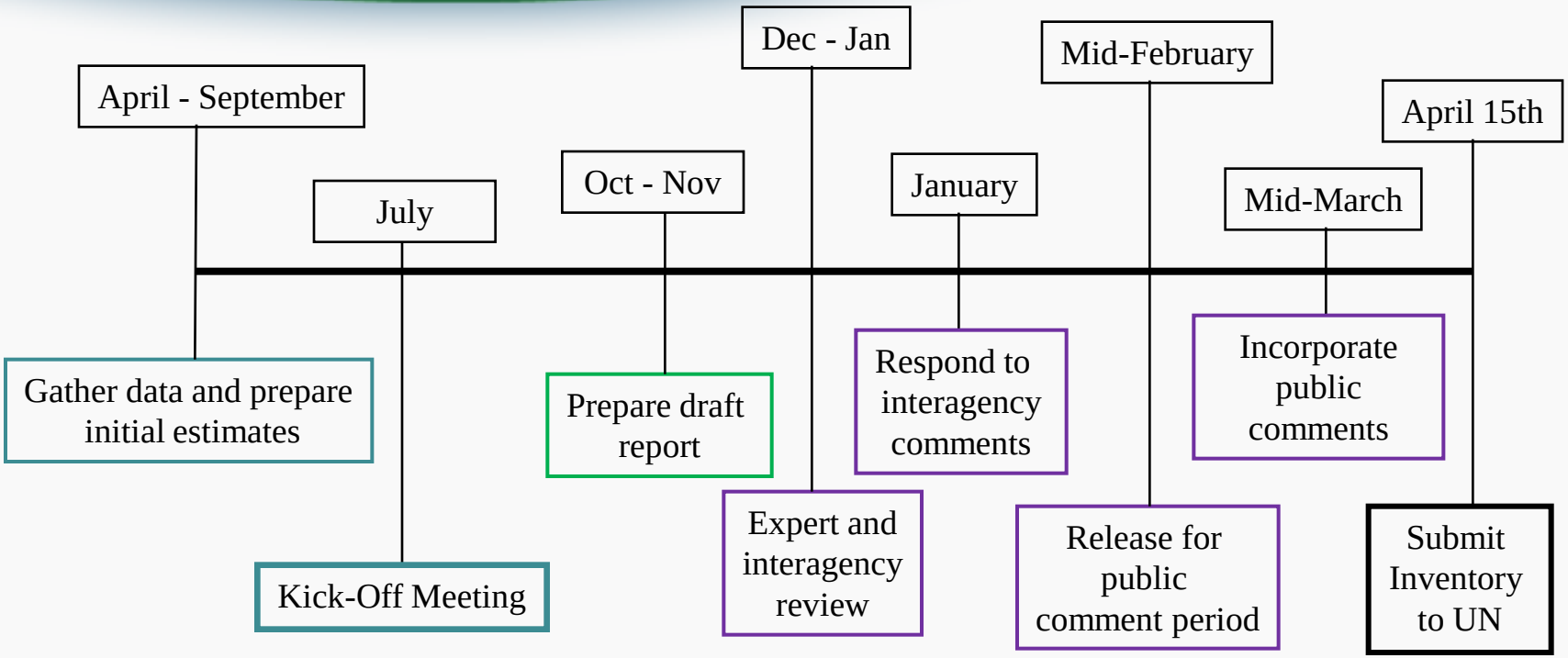
- Individual source leads manage each source category's calculations
  - Determine methodology, coordinate data sources, manage improvements
- Inventory coordinator defines approach to manage process through annual "kick-off memo"
  - Source lead roles & responsibilities, reference, QA/QC approaches and archiving, timeline and deadlines

Example: Institutional Arrangements for Industrial Processes

Applying 2006 IPCC Guidelines

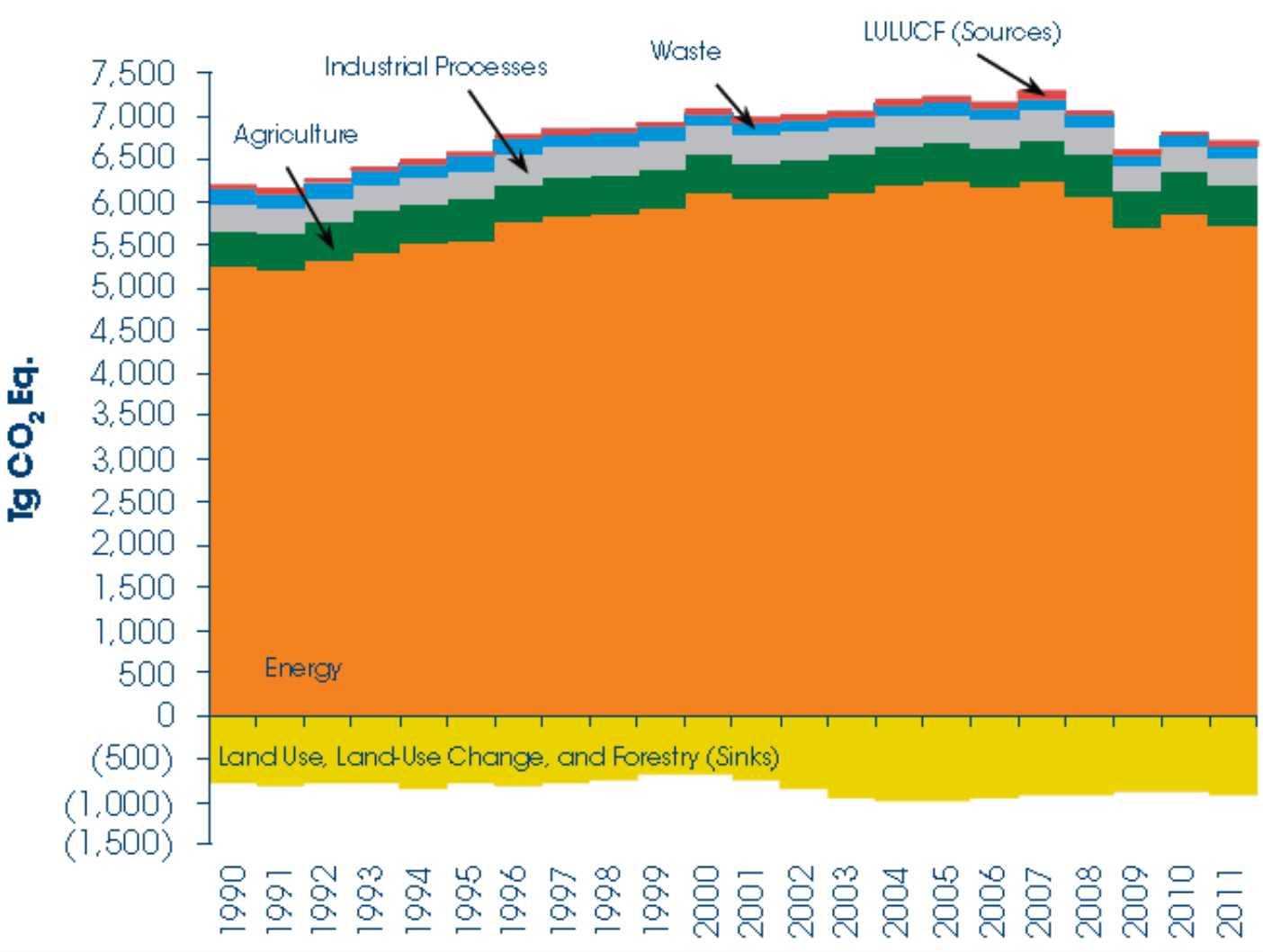


Timeline for U.S. GHG Inventory Preparation



- **Inventory planning**
  - Selection of methodology, equations, models
  - Data collection and generation of estimates
- **Inventory compilation**
  - Process and synthesis of estimates
  - Internal data analysis
- **Review process**
  - Review and comment by other U.S. agencies, experts, scientists and review by general public
    - 30 day review period announced in the U.S. Federal Register

Key findings: 2013 inventory



US GHG emissions in 2011 = 6,702.3 Tg CO_2e

1.6% decline from 2010 to 2011, due to decrease in energy consumption across most sectors and a decrease in carbon intensity for electricity generation

Key categories – 2013 inventory