THE WHITE HOUSE
WASHINGTON

Greenhouse Gas Monitoring & Measurement Interagency Working Group

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March 29, 2023
CESAS, Space Studies Board

Motivation for Increased Focus on GHG Monitoring & Measurement

- U.S. has pledged to reduce nationwide GHG emissions by 50% by 2030 and achieve net-zero emissions by 2050. To support this goal, we need to:
    - Track progress towards GHG emissions targets
    - Assess effectiveness of GHG mitigation policies/actions
    - Inform mitigation efforts by municipalities and others

- The opportunity exists to further **enhance GHG emissions information & analyses** to take advantage of areas where **scientific and technological advances** are moving quickly and better **leverage current and upcoming observing systems**.

- "Rapidly increasing **demand from a range of users for trusted information** about GHG emissions" (Academies report, *Greenhouse Gas Emissions Information for Decision Making*)

- **Enhancing coordination across agencies** will help accelerate efforts to enhance GHG emissions information and avoid unnecessary overlap of efforts.

GHG Monitoring and Measurement Interagency Working Group (GHG IWG)

- Co-led by OSTP, OMB, and Climate Policy Office

- Involves:
  - Department of Agriculture
  - Department of Commerce
  - Department of Defense
  - Department of Energy
  - Department of the Interior
  - Department of State
  - Environmental Protection Agency
  - National Aeronautics and Space Administration
  - National Science Foundation

GHG IWG Efforts

1. Assess capabilities and gaps
2. Develop strategy for integrated monitoring and measurement system & framework for agriculture & forestry MRV
3. Pursue demonstration projects (aka “use cases”)
    - Coal Mine Emissions
    - Oil & Gas Production
    - Urban GHG Emissions Information
    - Landfill Emissions
    - “Natural systems”
4. Increase interagency alignment and coordination on federal strategy
5. Public engagement, beginning with RFIs

RFI on Draft Federal Strategy

RFI seeks public comment on draft *Federal Strategy to Advance an Integrated U.S. GHG Monitoring and Information System*

RFI prompt asks for feedback on:

1. Omissions, gaps, errors
2. Opportunities to partner
3. Coordination mechanisms to enhance collaboration with external entities

Deadline April 4

Draft strategy & RFI instructions on NASA NSPIRES page:
https://go.nasa.gov/USGGMIDraftFederalStrategy

Draft Federal Strategy on Integrated U.S. GHG Monitoring & Information System

- Take advantage of advanced measurement technologies and new GHG observational data to improve spatial and temporal resolution.

- Rely on coordinated use/integration of:
  - Atmospheric-based approaches ("top down") that utilize observations of atmospheric concentrations
  - Activity-based approaches ("bottom up") that capture the magnitude of human-related activity resulting in emissions or removals taking place during a given time period

- Achieving convergence of results from both approaches is expected to be an iterative process that will lead to improvements in the consistency, accuracy, and specificity of GHG emissions information.

Draft Federal Strategy on Integrated U.S. GHG Monitoring & Information System

- Prototype (1.0) version of GHG monitoring system leverages mature research capabilities and existing/upcoming observing systems, including:
    - NOAA Global GHG Reference Network and modeling capabilities
    - NIST Urban GHG Measurements Testbed
    - NASA GHG Satellites, Airborne Research Program and data assimilation systems
    - Upcoming extramural research investigations or projects funded by DOE, NSF, NOAA, & NASA
    - Current & upcoming observing systems developed by academia, commercial and NGO sectors

- Activity-based data from EPA, USDA, Energy Information Administration, and other sources

Takeaways from GHG IWG Work

The interagency GHG effort is:

- More than a research initiative
  - Concrete outcome: Enhanced GHG data & information that informs GHG mitigation efforts
  - Requires understanding of GHG data user perspective and needs
  - For the prototype (1.0) version of a GHG monitoring system, seeks to identify mature research capabilities and areas where additional effort would significantly enhance GHG data and information

- More than just satellites: Utilize a multi-tiered observing approach involve satellite, airborne, and surface observations.

- More than just the feds: Coordinate with and leverage work of entities in academia, NGO, and private-sector.

Connection to NASA Earth Science

- NASA is co-leading the major workstreams of the GHG IWG.

- NASA is in discussions with other agencies on prototyping a greenhouse gas monitoring & information center.

- Consistent with integrated science and applications framing in 2017 Decadal Survey: "Decadal Community Challenge: Pursue increasingly ambitious objectives and innovative solutions that enhance and accelerate the science/applications value of space-based Earth observation and analysis to the nation and to the world in a way that delivers great value…."

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Thank you!

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