

Inventories



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Methane Abatement for Oil and Gas: Handbook for Policymakers

About the Handbook

A 'how-to' action guide to empower legislators, ministries, regulators, and NOC officials to adopt and enforce legal instruments that will rapidly and effectively reduce methane emissions from the oil and gas sector.

Available here:

<https://cldp.doc.gov/methane-abatement-resources>

Methane Abatement for Oil and Gas

Handbook for Policymakers



Methane Abatement for Oil and Gas: Handbook for Policymakers

About the Handbook (Cont.)

- Sponsored by **U.S. Department of State, Bureau of Energy Resources.**
- Drafted over one week in an intense session with 13 expert co-authors.
- Co-written by authors representing:
 - Government (U.S., Sri Lanka, and Bangladesh)
 - NGOs
 - Multilaterals
 - Industry
 - Academia



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Key Takeaways

- Emission inventories are essential for understanding the relative magnitude of different emission sources.
- The development of emission inventories can be distinct from activities that monitor emissions, although recently, there have been efforts towards bringing these two types of data closer together.
- Initial inventories might be compiled by multiplying activities by emission factors without actual emissions measurements. This step can be most appropriate when first building a methane emissions inventory.
- There is an ambition to move towards measurement-informed methane inventories, which can include additional monitoring information from sources like satellites and aircraft to improve estimates of methane emissions.
- Resources to assist countries in developing their inventories are listed at the end of this presentation.



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Emission Inventories and Monitoring

- Sectors with dispersed emissions (e.g., agriculture, waste management, oil & gas) have developed emissions inventories using activity data and standard emissions factors.
- Emission factors – estimate of the average emissions for an activity or equipment. Generally developed from academic studies or field measurement campaigns.
- Technologies to monitor methane emissions from oil & gas operations are increasingly utilized.
- While emission inventories and monitoring are distinct activities, the trend is towards aligning them.

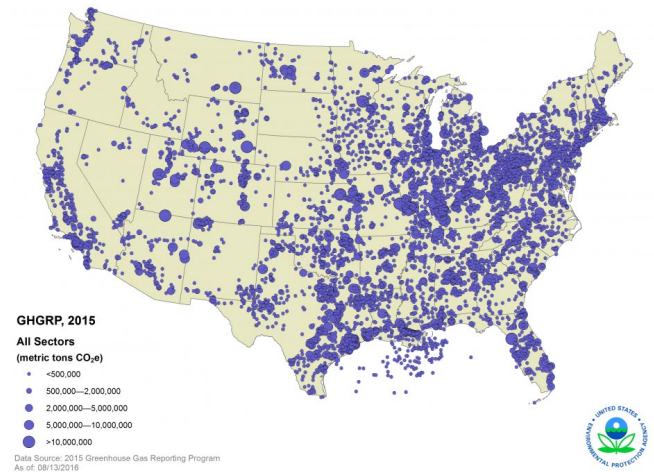
Recent estimates using measurements from aircraft have calculated higher emissions levels than estimates from emission factors.



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Data Needed for Emission Inventories

- Inventories are often compiled from estimates generated by combining emission factors with activity data.
- Emission factor-based approaches cover average emissions over a range of assets. They may not precisely correspond to the emissions of any one site.
- Those looking to improve methane emission information seek to move from **simple factors** (i.e., based on production or throughput) to **source-specific emission factors** and to **measurement-informed reporting** that uses additional information sources (e.g., continuous emission monitoring, periodic aerial, satellite surveys).



The U.S. Greenhouse Gas Reporting Program has a reporting threshold of 25,000 tonnes of CO₂ equivalent emissions per year.



Inventory of Plugged and Abandoned Wells

- Unused (and improperly plugged) wells can emit significant volumes of methane and other substances.
- **Orphaned wells** are unplugged wells that have no responsible owner on file. Emissions from unplugged wells can be reduced by requiring operators to provide upfront financial assurance (i.e., bond sufficient to cover the closure cost of a well), robust asset transfer application to track ownership and responsibility, and funding agencies to plug, cap, and reclaim land associated with orphaned wells.



Design Considerations for Developing Reporting Programs and Emissions Inventories

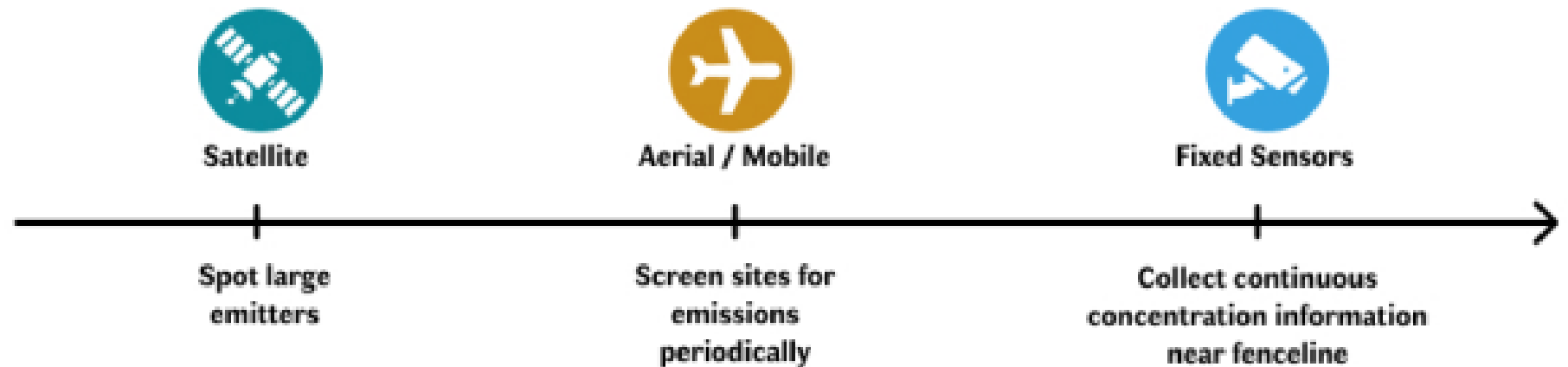
- A well-designed reporting program can serve as a key input to developing national-level emission inventories and mitigation analyses.
- Key factors to consider include:
 - Scope of Reporting
 - Requirement to use Specific Methodologies
 - Transparency of Inventory Data
 - Inclusion of Additional Data
 - Third-Party Verification of Data
 - Factors Contributing to Uncertainty



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Technologies for Monitoring

- The costs and benefits of various technology options for monitoring emissions vary.
- Low-cost interventions like the use of publicly-available satellite data can form the baseline of a program in the near-term.
- An aerial or mobile monitoring system may require government resource expenditures such as contracting with third-party technology providers.



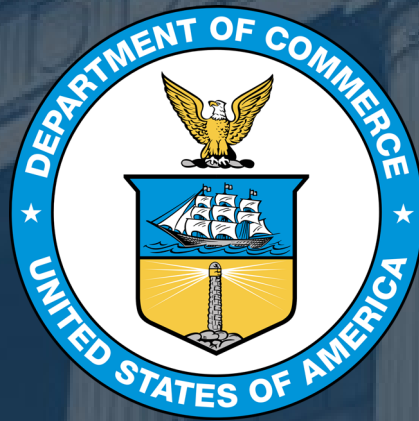
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Resources Available to Support Inventory Development

This is a non-exhaustive list of resources/services to support governmental methane emission reduction programs:

- Climate and Clean Air Coalition (CCAC)
- Intergovernmental Panel on Climate Change (IPCC)
- Clean Air Task Force (CATF)
- U.S. Environmental Protection Agency (EPA)
- Oil Climate Index Plus Gas (Rocky Mountain Institute)
- Oil and Gas Methane Partnership 2.0 (OGMP 2.0)
- Carbon Limits
- American Petroleum Institute (API)
- MiQ





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