User requirements in the Integrated Global Greenhouse Gas Information System (IG³IS)

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IG³IS Implementation principles

IG³IS is a common framework for provision of the **systematic services to user community** who intend to reduce its greenhouse gas emissions

- Support the use of atmospheric concentration data to improve emission estimates
- Consensus on a coherent set of good-practice methods and guidelines
- Quality control (benchmarking)

- Use greenhouse gas observations in the atmosphere
- **Engage stakeholders from the initial phase**
- Propagate consistent methods and standards
- Success-criteria is the use of provided information
- Concert matures with evolution of policy and technology

Range of scales

Global Stock taking

Countries

Cities

Industry

Users include national, state and city governments and emissions compilers, the private sector and UNFCCC

Engagement mechanism: regular user consultations

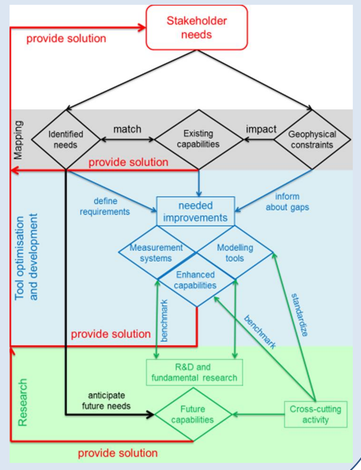
User engagement approach

Identify user needs

Map existing skill

Develop new tools

Initiate fundamental research

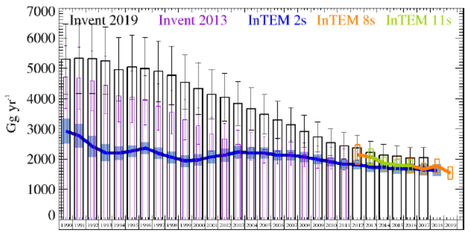


Stakeholders Needs

To reduce uncertainties in refrigeration sector, LULUCF, soil emissions, wastewater treatment, biogas facilities, waste incineration and industrial leakages.

Develop a standard methodology for emission estimates for different sectors and scales; Develop tools to measure mitigation efficiency.

National Objective

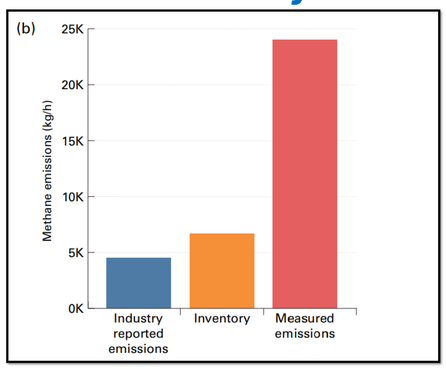


United Kingdom emission estimates of methane from the national inventory and calculated on the basis of atmospheric observations

Technical capabilities

Observations based emission estimates are recommended as a quality control tool in IPCC National Emission Inventory Guidelines 2019 refinement, they allow to reduce uncertainty of the national totals reporting (examples include UK and Switzerland).

Industrial Objective



Comparison between measured CH_4 emissions and "bottom-up" estimates based on inventory and industry reports in Alberta region, Canada.

To reduce uncertainties in the industrial sector for a baseline of emissions at facilities.

There is a need to improve energy efficiency in the industry; quantify & reduce methane emissions; to have projections for short- and long-term decision-making for staying ahead of risks & opportunities; to reduce the emissions from transport sector; and to promote scalable actions.

Technical capabilities

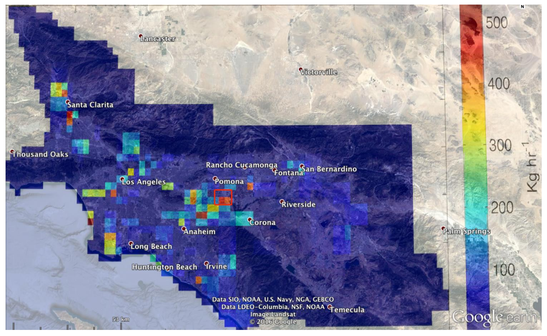
Oil and gas sector was the most successful one in implementation of the observations-based method for identification of emissions associated with the sector. These data were used to strengthen sector related legislation in USA and Canada.

Stakeholders Needs

General Uncertainties: To improve consistency between scales; better knowledge about the CH_4 emissions; improved mapping of urban sources; spatially scalable system; better understanding of public policy impacts.

Specific Uncertainties: Improving emission estimates from on-road vehicles; quantifying carbon sinks of tree planting initiatives; co-benefits to health sector related to air quality.

Subnational Objective



Los Angeles inverse model of 12 tower measurements shows methane hot spots at known & a large unknown source

Technical capabilities

Several cities that implement IG³IS managed to identify unknown emission in the cities through detailed mapping and supported identification of the efficient climate solution on urban scale.