Towards a Novel Integrated Approach for Estimating Greenhouse Gas Emissions in Support of International Agreements

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IG³IS

IG³IS (Integrated Global Greenhouse Gas Information System) is a joint initiative of WMO and UNEP, using inverse modelling tools for emission estimations of greenhouse gases in support of the inventories.
IG³IS will combine measurements from different scales and quality (GAW sites, mobile platforms, satellites, sensors) with atmospheric transport models.
IG³IS will support nations to improve the accuracy of the inventories and their ability to evaluate mitigation strategies.

Near-term Objectives

- What are the main improvements needed to strengthen the existing national inventory reporting system, and how can IG³IS contribute to these improvements?
- Are there research capabilities with demonstrated skill to meet these information needs in a quantitative and timely way?
- What valuable and additional outcomes will result?
- Will stakeholders see this value and be early and active partners in this effort?

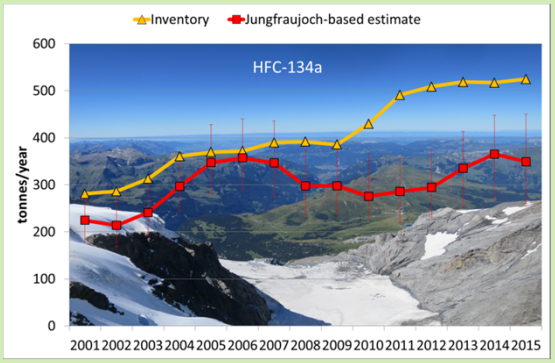
Lines of Activity

- The preparation of methodological guidelines that describe "good practice" use of atmospheric measurements for implementation under each objective area.
- The initiation of new projects and demonstrations that propagate and advance these good practice capabilities and build confidence in the value of IG³IS information with stakeholders.

IG³IS Goals and Preliminary Showcases

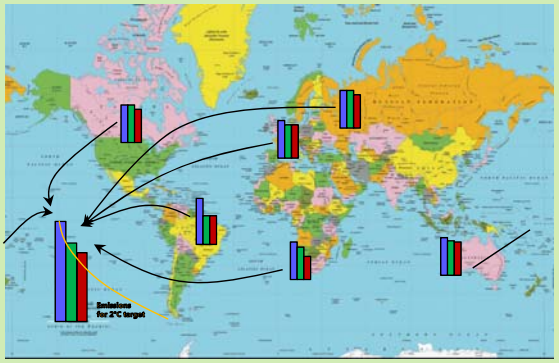
Support of Paris Agreement

Improved national inventory reporting
by making use of atmospheric measurements



Switzerland: top-down and bottom-up estimates of HFC-134a

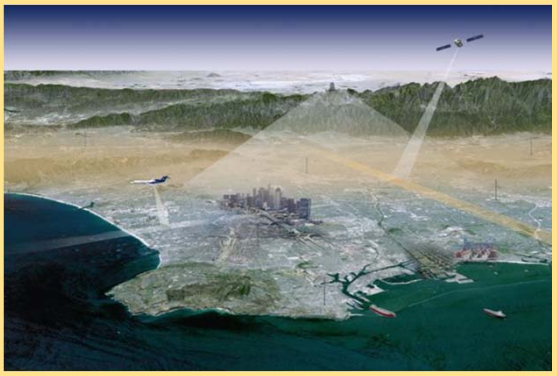
Tracking of NDC and Global Stocktaking
by timely and quantified trend assessments



Combination and evaluation of global stocktaking

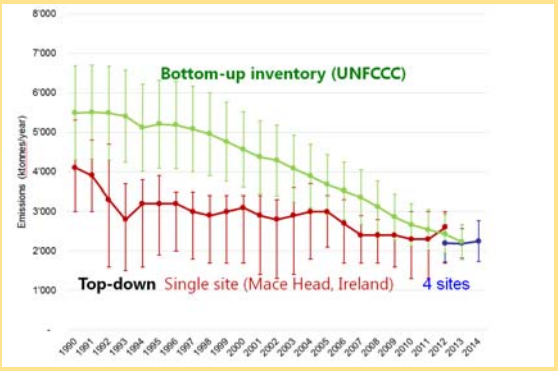
Key sub-national efforts and new mitigation opportunities

Cover large urban source areas (megacities)
by greenhouse gas monitoring



City-scale projects in Paris and Los Angeles

Assessment of large unknown CH_4 emissions:
Detection and Quantification



United Kingdom: top-down and bottom-up estimates of methane

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WMO OMM
GLOBAL ATMOSPHERE WATCH
UNEP United Nations Environment Programme