

Greenhouse gas verification workshop held in Dublin, 24-25/06/15

Representatives attended from DG Research, ESA, Copernicus, ICOS, funding bodies including UK, DE, FI, members of the research community and GHG inventory experts.

Context: This topic was originally proposed as a JPI Climate topic by Ireland but not progressed due to resource limitations. At the Oct 2014, during the JPI Climate Governing Board (GB) meeting, the UK and Ireland agreed to advance this work. It was subsequently included as a H2020 topic for 2016. The workshop aimed to identify steps to advance this work.

The workshop identified key strengths, areas for development, and communication/ understanding gaps, including between inventory and science communities. A draft shared vision and next steps were agreed. These were presented to the Governing Board meeting in November 2015.

Outcomes:

Outline Vision: A science based system for determination of GHG emissions and removals that informs and supports policy development, decision making, and official reporting and accounting systems

Elements

Establish a framework, and practical focus, for integrated and enhanced analysis of existing and future observational and project based data.

- Support the improvement of National GHG inventories including the development of IPCC Good Practice Guidelines and harmonisation of scientific support for inventory development
- Enables a positive dialogue on approaches to improve understanding of convergences and divergences between independent and official analyses
- Provide independent analysis of GHG emissions and removals that is used to verify official reporting/accounting systems
- Advances fundamental understanding and characterisation of systems and processes that effect emissions across terrestrial, ocean and atmospheric domains including feedbacks
- Enhance temporal and spatial analysis of emissions and removals at scales appropriate for policy development and decision making, including national, sub-national and city levels
- Map and coordinate existing national research activities across Europe

Overall enables Europe to be a leader in advanced Measurement Reporting and Verification (MRV) systems that can support analysis of global to local emissions and which can be used to chart progress to achievement of shared goals.

Opportunities through initiatives

Policy and its implementation requirements including actions and supports e.g. observation systems (GCOS)

- ICOS and similar networks
- Satellite observations, ESA EO, Copernicus, GEO/GEOSS
- Research flights and flights of opportunity
- Research vessels and ships of opportunity
- Others arising from scientific findings/new technologies

Key Actors

- Policy community
- Atmospheric science communities (emissions)
- Flux and ecosystem communities (sinks and sources)
- Marine science communities (incl. coastal)
- Emission inventory communities and specifically the LULUCF inventory communities (sinks and sources)
- Sectorial, industry partners e.g. for specific emission factors/models
- Global players such as IPCC + UNFCCC

Challenges

Resource limitations and demands on key expertise e.g. inventory, development

Observation systems and their capacity to deliver required data

Barrier to trans-disciplinary dialogue including between the key domains

Understanding of the major cycles and processes and the impacts of climate change on these

Meteorology, use of atmospheric tracers and proxies as well characterisation and communication of uncertainty,

The imperatives arising from the need to address climate change

Net-zero carbon dioxide 2055-2070

Effectively near or below zero emission of other GHGs by 2100

Actions identified by JPI Climate members were not progressed as this topic has been included in a H2020 call. JPI Climate should keep this issue under review.