INTEGRATED GREENHOUSE GAS MONITORING SYSTEM FOR GERMANY

GEFÖRDERT VOM
Bundesministerium für Forschung, Technologie und Raumfahrt

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Bundesministerium für Verkehr

Background

The national greenhouse gas inventory provides an important basis for climate protection decision-making. Within the ITMS project, an innovative and operational system is being developed that supports national inventory reporting by combining greenhouse gas observations with models of sources and sinks, as well as atmospheric transport models.

www.itms-germany.de

Phase 1 (2021 – 2026)
ITMS Demonstrator

Phase 2 (2026 – 2030)
First Generation ITMS

Phase 3 (2030 – 2033+)
ITMS Operationalization

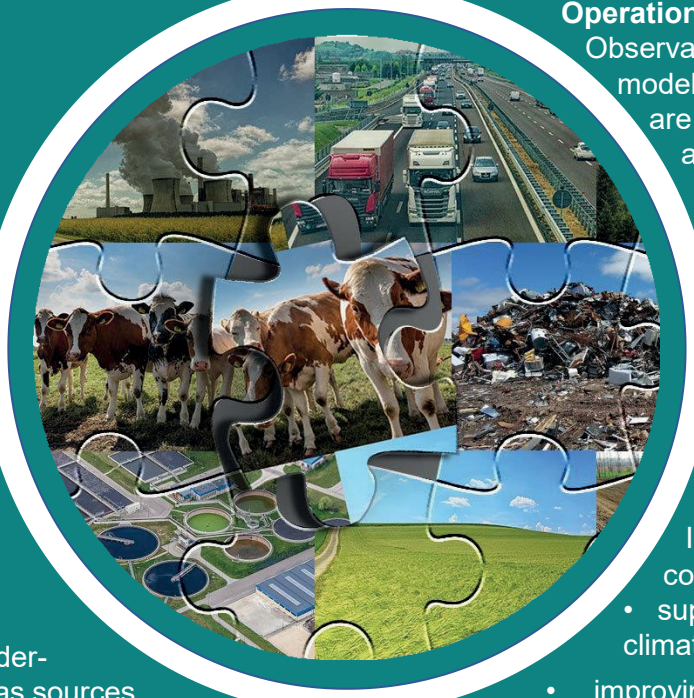
Project Goals

Establishment of a Monitoring System
Development of an observation-based monitoring system for greenhouse gas emissions (e.g., CO_2, CH_4, N_2O) in Germany.

National Service
Support for the monitoring, reporting, and verification of greenhouse gas fluxes, in particular for national inventory reports.

Data Provision and Visualization
Provision of high-resolution spatial and temporal information on greenhouse gas sources and sinks in Germany.

Research
Identification of over- and under-estimations of greenhouse gas sources and sinks, detection of regional hotspots, and differentiation between anthropogenic and natural emissions, with a focus on the agriculture, forestry, and land-use sectors.



Key Features

Integrative Approach
Pooling German expertise to establish a national service, making use of Copernicus services, EU research projects, ICOS, IAGOS, and satellite data.

Operational System
Observations, atmospheric transport models, and source-sink information are combined and integrated into an operational system.

Optimization of the Observation System
Evaluation of the system and development of strategies for improvements.

Benefits & Impact

ITMS will make a significant contribution by:

- supporting expert committees on climate issues
- improving the accuracy of greenhouse gas reporting in Germany and
- fulfilling the obligations of the Paris Agreement, the national greenhouse gas inventory requirements under the Federal Climate Protection Act, and the UN Sustainable Development Goals

ITMS promotes the transparency and accuracy of the emissions inventory and strengthens Germany's role in global climate protection through an independent monitoring system.