

FOCI

NON-CO2 FORCERS AND THEIR CLIMATE, WEATHER, AIR QUALITY AND HEALTH IMPACTS

ABOUT

The FOCI project (2022-2026) aims to better understand the impacts of key non-CO2 radiative forcers, to assess where and how they arise, and their impact on the climate system. Because of the current existing gaps in the knowledge of these processes, the project will find and test an effective implementation of them into global Earth System Models (ESMs) and into Regional Climate Models (RCMs), and hopes to subsequently use these tools to investigate mitigation and adaptation policies incorporated in selected scenarios of future development, targeted at Europe and other regions of the world. New regionally tuned scenarios based on improved emissions estimates will be developed to assess the effects of these non-CO2 forcers, namely specific anthropogenic and natural precursor emissions of short-lived GHGs and aerosols. The project aims to be inclusive towards the wider user and stakeholder communities of these tools, and mutual interactions between them, the results, and the climate services producers will provide feedbacks for the specific scenario preparations and potential applications to more accurately support climate policy.



OBJECTIVES

1. To examine and evaluate the climate relevant processes and feedbacks of anthropogenic primary and secondary radiative forcing species, based on new and available observations datasets
2. To examine and evaluate the climate relevant processes and feedbacks of natural aerosols and BVOCs, as precursors for SOA based on new and available observations datasets
3. To integrate observational and modelling datasets and data products for improving and evaluating multiscale climate and atmospheric composition models
4. To improve and evaluate state-of-the-art global ESMs and regional climate and atmospheric composition models (RCMs), targeting specific critical processes with the largest uncertainties for improving future next generation climate projections
5. To improve tailored emission inventories for non-CO2 radiative forcers and scenarios for detailed, high-resolution, multiscale climate and associated impact projections for specific regions (e.g. Europe, South Asia, Africa and Arctic), using innovative coupled modelling frameworks
6. To undertake innovative and regionally relevant integrated analysis of optimised mitigation strategies, to support climate policy, deriving multiple benefits (e.g. climate mitigation and adaptation, human health, social, economic, and developmental), quantifying the sensitivity of climate system tipping points to non-CO2 forcers and meeting the global challenge of stabilising global temperatures and minimising the associated impacts on climate, weather, air quality and health
7. To implement a global outreach, dissemination and stakeholder engagement strategy targeted at providing updated scientific evidence on the impact from key non-CO2 radiative forcers for supporting national and international policy and operational services, including formulating recommendations on the most efficient pathways supported by integrating climate, health, urban and energy services

