

Copernicus Atmosphere Monitoring Service

Operations phase

The Copernicus Atmosphere monitoring service provides continuous data and information on atmospheric composition. The service describes the current situation, forecasts the situation a few days ahead, and analyses consistently retrospective data records for recent years. The Copernicus atmosphere monitoring service supports many applications in a variety of domains including health, environmental monitoring, renewables energies, meteorology, and climatology.

It provides daily information on the global atmospheric composition by monitoring and forecasting constituents such as greenhouse gases (carbon dioxide and methane), reactive gases (e.g. carbon monoxide, oxidised nitrogen compounds, sulphur dioxide), ozone and aerosols. The service also provides near-real-time analysis and 4-day forecasts, as well as reanalysis, of the European air quality, thus enabling a permanent assessment of the air we breathe. The monitoring and reanalysis of greenhouse gases and aerosols contribute to climate change studies by describing climate forcing. Thanks to daily analysis and forecasts of UV and stratospheric ozone, the service supports public health policies (e.g. skin cancer prevention).

Solar radiation is playing a key role in domains like health, agriculture and renewable energies. The Copernicus atmosphere monitoring service provides public and private organisations involved in solar energy usage with suitable and accurate information on the solar radiation resources at the Earth's surface.

In addition to the above-mentioned services, the Copernicus atmosphere monitoring service compiles emission inventories which serve as input to the atmospheric chemistry-transport models and estimates net fluxes of CO₂ and CH₄ at the Earth's surface. Knowing emissions and surface fluxes are prerequisite for understanding the composition of the atmosphere.

The service is delivered in a pre-operational mode.

Source: <http://www.copernicus.eu/pages-principales/services/atmosphere-monitoring/>

GIO phase

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The EU-funded MACC (Monitoring Atmospheric Composition and Climate) project is responsible for the development of pre-operational GMES atmosphere monitoring service.

It aims to provide data records on global atmospheric constituents, which are essential for monitoring climate (e.g. monitoring atmospheric concentrations of carbon dioxide, methane, ozone and aerosols), air quality (forecasts and reanalyses of the air quality) and UV radiation (based on ozone and global aerosol data assimilation results).

There is one downstream project, Pasadoble. Within the timeframe of 2010--2013, this project aims to develop local and regional air quality services to improve information for the public and people at risk, for tourism and sports, to support the health services and to deliver policy-relevant data for local authorities and regional agencies.