European Commission

Atmosphere Monitoring Service

The Copernicus Atmosphere Monitoring Service is part of the Copernicus Programme, which is an EU Programme managed by the European Commission (EC) and implemented in partnership with the Member States, the European Space Agency (ESA), the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), the European Centre for medium-range Weather Forecasts (ECMWF), EU Agencies and Mercator Océan. The Programme is aimed at developing a set of European information services based on satellite Earth Observation and in-situ (non-space) data analyses.

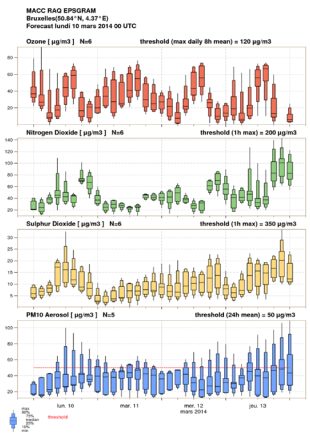
What is the Copernicus Atmosphere Monitoring Service?

The Copernicus Atmosphere Monitoring Service provides the capacity to continuously monitor the composition of the Earth's atmosphere at global and regional scales. This service capacity encompasses the description of the current situation (analysis), the prediction of the situation a few days ahead (forecast), and the provision of consistent retrospective data records for recent years (re-analysis). The service generates geophysical products which require further technical processing and various forms of high level information to support decision makers.

The main areas that the Copernicus Atmosphere Monitoring Service focuses on are:

- **Air quality and atmospheric composition;**
- **Ozone layer and ultra-violet radiation;**
- **Emissions and surface fluxes;**
- **Solar radiation;**
- **Climate forcing.**

In November 2014, the European Commission signed a Delegation Agreement with ECMWF for the implementation of the service. The service will be fully operational from July 2015.



Pollution forecast for Brussels

What does the Atmosphere Monitoring Service do?

Typical products provided by the service are:

- Maps and data for regional air quality forecasts;
- Retrospective assessments of air quality;
- Identification of pollutants and their source;
- Pollen concentration levels in the atmosphere;
- Resources for evaluating possible emission control measures;
- Inputs to local air quality forecasts, health information and warnings.

Space

Copernicus
Europe's eyes on Earth

Some examples:

Air Quality

The Copernicus Atmosphere Monitoring Service provides continuous observation of the composition of the Earth's atmosphere and helps predict air quality. Atmospheric composition helps to understand phenomena such as desert dust plumes, long-range transport of atmospheric pollutants including pollen as well as ash plumes from volcanic eruptions. This information can be relevant for different domains such as public health or even safety of air traffic.

Each day, the Copernicus Atmosphere Monitoring Service provides analyses and forecasts detailing constituents in the Earth's atmosphere at various heights above sea level for the next 96 hours.

Solar Radiation

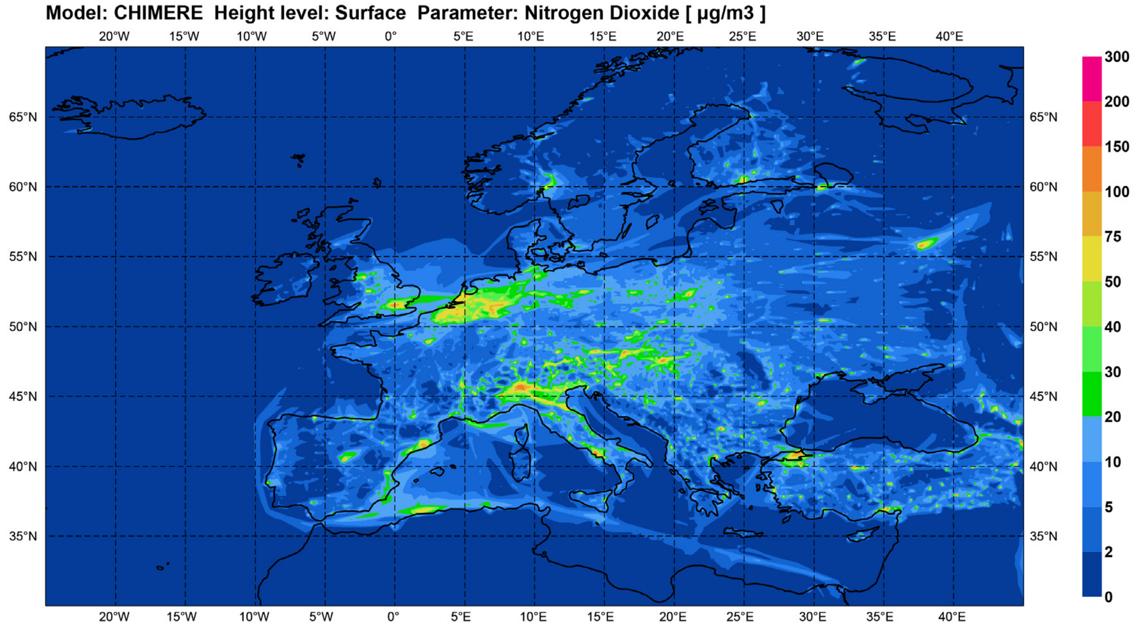
The Service also monitors levels of UV radiation and provides 4-day forecasts on a European and global scale, which helps optimise the use of solar energy and supports the prevention of skin cancer.

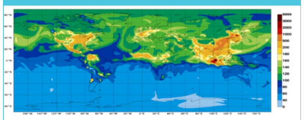
What is the added value of the Copernicus Atmosphere Monitoring Service?

- The service delivers information on the air we breathe;
- The recording and analysis of solar radiation provides information to public and private organisations in fields such as health, agriculture and solar energy;
- The service compiles emission data and also estimates net fluxes of CO_2 and CH_4 at the Earth's surface. This helps improve understanding of key climate forcings;
- Freely available high quality data opens new possibilities in monitoring the composition of the atmosphere and enables the creation of new business ideas supporting public and private stakeholders in a wide area of applications linked to atmospheric science.

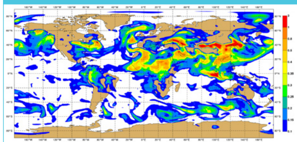
The Copernicus data policy promotes the access, use and sharing of Copernicus information and data on a full, free and open basis.

Wednesday 6 November 2013 00UTC MACC-RAQ Forecast t+041 VT: Thursday 7 November 2013 17UTC
Model: CHIMERE Height level: Surface Parameter: Nitrogen Dioxide [µg/m3]

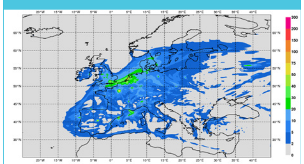




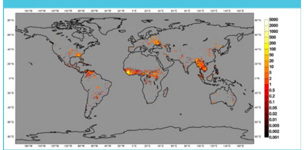
Surface Carbon Monoxide



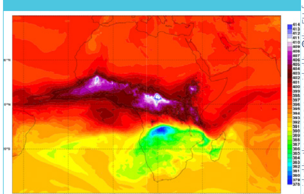
Total Aerosol Optical Depth



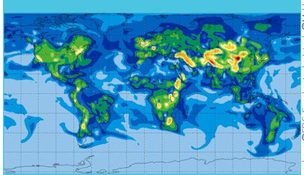
Surface parameter:
Nitrogen dioxide



Average of Observed
Fire Radiative
Power Areal Density



Co_2 concentration over Africa



Global nitrogen oxides

Users can find out more about the products delivered by the Copernicus Atmosphere Monitoring Service at: **http://atmosphere.copernicus.eu**