

Welcome to the Environmental Data Monitor



*We believe the passion of our citizens can change the world.
Our mission is to support and encourage them.*

The Environmental Data Monitor Platform

The EDM project was initiated in 2019 and offers an open source Cloud platform containing tooling and custom views for civilians and environmental services to monitor their environment for free.

The aim of the program is to promote development in the areas of transparency, Open Data and Citizen Science. Regional groups consisting of designers, developers, journalists and others meet regularly in Labs. They develop apps that inform, positively shape and support society and make the work of administrations and authorities more transparent. The city of the future belongs to its citizens. The digital tools, the Maker Movement and Citizen Science are leading to more and more people being given the opportunity to design the city themselves.

Did you know that for example 95% of Dutch EU reports on biodiversity are filled with citizen science data? The data collected by volunteers is also increasingly being used for all kinds of scientific research and publications. In addition, our projects also add social value. By collecting data about nature, volunteers become more involved with their natural environment. There is also a financial aspect: citizen science may not be free, but it is much cheaper than if the same work were done by paid employees. Some research would even be impossible if the data were not collected by volunteers.



Particulate Matter Sensor

The particulate matter limits are regularly exceeded. In our town the air pollution causes 13 months of premature deaths on average and 9 months are related to (ultra) particulate matter. The following questions come to mind:

- How can the air quality in your city be measured and visualized?
- What effect does the high volume of traffic have on the air?
- What effect do the emissions from the industry have?
- What effect does your neighbours chimney have on the air quality?
- How high is the exposure to fine dust and nitrogen oxides in other residential areas compared to yours?

We answer these and other questions by building & deploying fine dust sensors measuring PM10 and PM2.5 particles, combined with sensors for temperature and moist values and visualizing the data in an overall picture in the [Air Data Map](#).

We combine the different data sources from our other Environmental Data Projects to offer custom views in the Environmental Data Monitor Application (EDMA) to inform you and provide the Government Environmental Services with the required data to form policy in support of better air quality.



TROPOspheric Monitoring Instrument

The TROPOspheric Monitoring Instrument (**TROPOMI**) is the satellite instrument on board the Copernicus Sentinel-5 Precursor satellite. The Sentinel-5 Precursor (S5P) is the first of the atmospheric composition Sentinels, launched on 13 October 2017, planned for a mission of seven years and is an initiative of the Dutch KNMI & ESA.

The TROPOMI satellite gathers & publishes global data for:

- Ozone
- Nitrogen dioxide
- Sulfur dioxide
- Formaldehyde
- Surface UV-B
- Aerosols
- Carbon Monoxide
- Methane
- Clouds

We are currently investigating integration options with the [Copernicus Open Access Hub](#) which provides complete, free and open data access.

The [KNMI](#) is the Dutch national research and information centre for meteorology, climate, air quality, and seismology and advises on and warns society to reduce risks in the field of weather, climate and seismology and to limit damage and injuries. With high-quality knowledge and technology plus an extensive observation network, KNMI offers products and services that contribute to the safety, accessibility, sustainability and prosperity of the Netherlands.

The [Air Data Program](#) is originally an initiative from the University of Stuttgart and the OK Lab Stuttgart which is part of the program Code for Germany of the Open Knowledge Foundation Germany and was founded in 2015. EDSP ECO has adopted the program, enrolled their concept in several cities in the Netherlands and we incorporated it in our Environmental Data Monitor Platform.



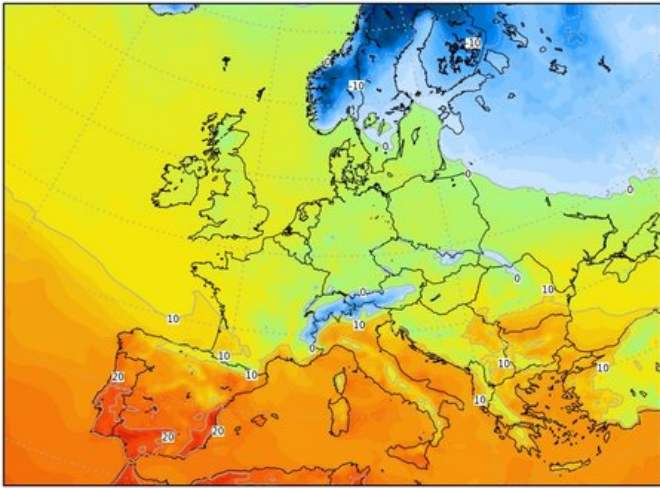
Noise & NO2 Sensor

The Air Data Program is on the verge of adding two new sensors which greatly enhances the scope of the project. The NO2 Sensor is currently being tested and will be added by the end of 2020. Our Air Data team members are preparing for the pilot deployment in the Netherlands.

Breathing air with a high concentration of NO2 can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms, hospital admissions and visits to emergency rooms. Longer exposures to elevated concentrations of NO2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections.

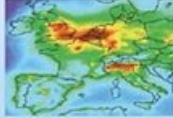
NO2 is a dangerous pollutant in and of itself and also contributes to the formation of PM2.5 and ozone, two of the most dangerous forms of air pollution. In the EU alone, cleaning up NO2 pollution [could save up to 75,000 lives per year](#).

At least [one million healthy years](#) of life are lost each year in Europe alone due to noise pollution (and this figure does not include noise from industrial workplaces). The World Health Organization concluded 'there is overwhelming evidence that exposure to environmental noise has adverse effects on the health of the population' and ranked traffic noise second among environmental threats to public health, the first being air pollution.



Measuring air pollution is increasingly important. NO₂ measurements show that the air in Europe is not clean:

low high



The biggest air pollutants are

- Nitrogen dioxide (NO₂)
- Particulate matter (PM)
- Ozone (O₃)

Views for Environmental Services (GOV) & City Council

Besides the functions provided to civilians enabling them to access, distribute or publish live or historical environmental data the Environmental Data Monitor application will also offer custom views and reporting functions for city council and local government Environmental Services to provide input for decision and policy making.

MeteoServer Data API

MeteoServer offers an Application Programming Interface (API) from which we can easily process the current weather data directly from their 10-minute network in our own app, website or monitoring system for free. This enables us to integrate data from local weather stations in the Environmental Data Monitor which provides essential information for comparison, input for the custom views and enables a whole range of different functions.

EDSP Sustainability Priorities





Affordable and Clean Energy



Clean Water and Sanitation



Climate Action



Decent Work and Economic Growth



Gender Equality



Good Health and Well-being



Industry, Innovation and Infrastructure



Life Below Water



Life On Land



No poverty



Peace, Justice and Strong Institutions



Quality Education



Reduced Inequalities



Responsible Consumption and Production



Sustainable Cities and Communities



Zero hunger