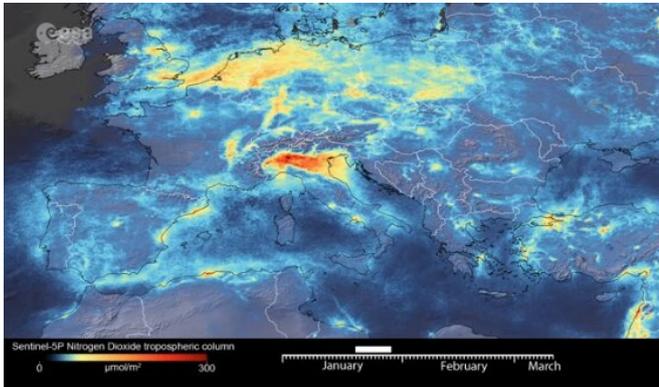


# Coronavirus: Nitrogen dioxide emissions drop over Italy

16 March 2020



Credit: contains modified Copernicus Sentinel data (2020), processed by ESA, CC BY-SA 3.0 IGO

New data from the Copernicus Sentinel-5P satellite reveal the decline of air pollution, specifically nitrogen dioxide emissions, over Italy. This reduction is particularly visible in northern Italy which coincides with its nationwide lockdown to prevent the spread of the coronavirus.

The animation shows the fluctuation of nitrogen dioxide emissions across Europe from 1 January 2020 until 11 March 2020, using a 10-day moving average. These data are thanks to the Tropomi instrument on board the Copernicus Sentinel-5P satellite which maps a multitude of air pollutants around the globe.

Claus Zehner, ESA's Copernicus Sentinel-5P mission manager, comments, "The decline in nitrogen dioxide emissions over the Po Valley in northern Italy is particularly evident.

"Although there could be slight variations in the data due to [cloud cover](#) and changing weather, we are very confident that the reduction in emissions that we can see, coincides with the lockdown in Italy causing less traffic and industrial activities."

Josef Aschbacher, ESA's Director of Earth Observation Programmes, says, "Copernicus Sentinel-5P Tropomi is the most accurate instrument today that measures air pollution from space. These measurements, globally available thanks to the free and open data policy, provide crucial information for citizens and decision makers."

The coronavirus disease (COVID-19) was recently declared a pandemic by the World Health Organisation, with more than 125 000 current cases of the disease reported globally. In Italy, the number of coronavirus cases drastically soared making it the country with the largest number of cases outside of China.

In an attempt to reduce the spread of the disease, Italy's Prime Minister Giuseppe Conte announced a lockdown of the entire country—closing schools, restaurants, bars, museums and other venues across the country.

The Sentinel-5 Precursor—also known as Sentinel-5P—is the first Copernicus mission dedicated to monitoring our atmosphere. The satellite carries the Tropomi instrument to map a multitude of trace gases such as nitrogen dioxide, ozone, formaldehyde, sulphur dioxide, methane, carbon monoxide and aerosols—all of which affect the air we breathe and therefore our health, and our climate.

Given the growing importance and need for the continuous monitoring of air quality, the upcoming Copernicus Sentinel-4 and Sentinel-5 missions, as part of the EU's Copernicus programme, will monitor key air quality trace gases and aerosols. These missions will provide information on air quality, stratospheric ozone and solar radiation, as well as climate monitoring.

Provided by European Space Agency

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