

meteoLCD Weblog

A weblog on climate, global change and climate measurements

« [COVID-19 Luxembourg: an animation of the Gompertz fit \(4/x\)](#)

[Lockdown and no PM improvement! \(2/2\)](#) »

Lockdown and no PM improvement! (1/2)



Comment Reblog Subscribe

Luxembourg went into economic lock-down (well "pseudo-lockdown" would be more appropriate) the 14th March 2020 with schools, most industries, shops, restaurants, sports activities etc. stopped and people asked not to leave home except for very important, exceptional reasons. The road traffic diminished drastically; here at meteoLCD we are used to heavy morning and evening traffic spikes when many foreigners who work in Luxembourg enter the country in the morning and leave in the late afternoon. The roads have become very empty...and all this should show up in the air quality parameters....but surprise, it doesn't !

This has been observed and commented on other places. In very polluted large cities, NO₂ levels have been seen falling, but not everywhere. Read this [recent article in Nature](#) where atmospheric scientist Dan Goldberg from Argonne National Laboratory is cited with "I haven't seen any statistically significant changes in air pollution in most US cities, which is contrary to the claims in some media articles". The German FOCUS online of today (13-April-20) has an [article](#) from Dipl. Ing. Martin Schraag titled "Kaum Verkehr...trotzdem Stickoxide Spitzenwerte: Corona entlarvt Fahrverbote als sinnlos".

So its time to look at the "real" numbers measured by meteoLCD and by our usual reference station of Beidweiler; we measure **fine particles** with an Airvisual Pro instrument from IQAir, Beidweiler uses an Horiba (you might re-read this article [here](#) for more details).

I choose the period from 14th March to 12 April 2020, which corresponds practically to the start of the lock-down period (which started definitively the 16th); we will compare with the same period from the previous year.

The Beidweiler data are fetched from the [discomap EU database](#), which is a bit tricky to use. Suffice to say that Beidweiler is the Luxembourg station STA-LU0105A; I leave the pleasure to fetch the correct data to the Sherlockians of my readers! The 2020 meteoLCD data are fetched from the [Airvisual cloud](#).

Here a table showing what happened to the fine particle concentrations during these two periods; the numbers correspond to the averages over the period:

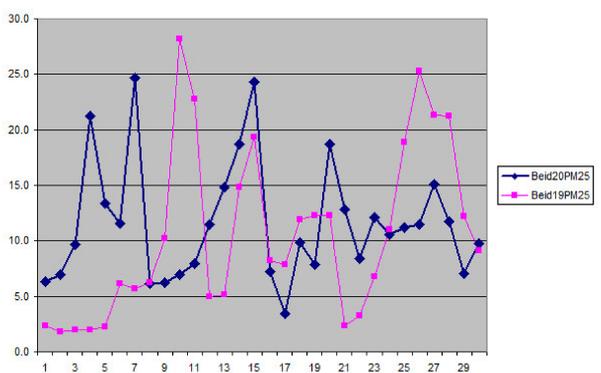
14-March to 12-Apr in year	Beidweiler PM2.5	meteoLCD PM 2.5	meteoLCD_AQI
2019	10.6	12.4	51
2020	11.6	11.2	43

Clearly not much to see here: the Beidweiler PM_{2.5} concentration increased slightly with better air, and the meteoLCD values decreased about the same amount. These changes are so small that they are well below the accuracy level of both instruments; so there is only one conclusion to draw: at these two stations, which are typical for rural/semi-rural locations, the traffic lock-down does not leave any visible trace!

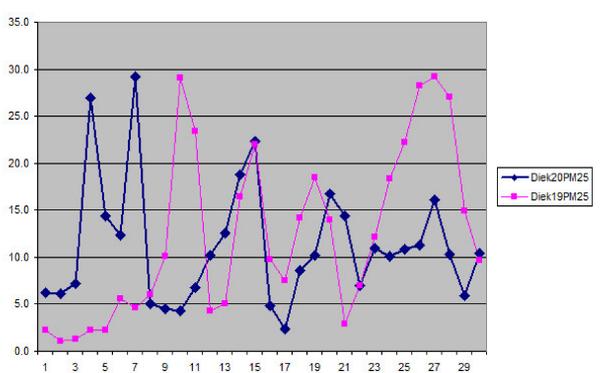
The AQI number is the US-AQI as defined by EPA; it would be foolish to conclude from the small decrease that air pollution in Diekirch became less!

Here two graphs showing the Beidweiler and meteoLCD data for the two periods:

Beidweiler PM2.5 14Mar - 12 Apr 2019 & 2020



meteoLCD PM2.5 14Mar - 12 Apr 2019 & 2020



Now, comparing raw PM readings is a bit rude; we know that meteorological parameters play a very big role. Suffice to say that the mean temperature was about the same (9.11, and 9.64), wind velocity also (1.98, 1.74). UVB radiation was a bit higher in 2020 (2019: 199, 2020: 248 mMED/h), but contrary to what one would expect, ground Ozone levels were lower (2019: 93, 2020: 48 ug/m³). So if the traffic lock-down has eventually left a small finger-print, the O₃ level would go in the expected direction.

Conclusion:

Do you remember the sometimes ugly discussions last year about the lethal danger of PM's, and that Diesel cars should be banned as soon as possible; but always ignoring that lean injection petrol engines emit about the same amount of NO_x and PM's, and still ignoring that the "green" -hyped wood burning is one of the major emitters of fine particles. In Germany the opposition to the very efficient Diesel cars reached religious fanaticism... and what do we see now, when Covid-19 has forced us to make a "super-experiment": PM 2.5 levels remain as they were!

(to be continued)

Share this:



Loading...

Related

- [Lockdown and no PM improvement! \(2...\)](#) April 18, 2020
- [NO2 emissions... is Luxembourg the bad guy? \(part1\)](#) June 12, 2016
With 1 comment
- [A peek at ground-Ozone](#) October 5, 2019

This entry was posted on April 13, 2020 at 16:56 and is filed under Uncategorized. You can follow any responses to this entry through the [RSS 2.0](#) feed. You can [leave a response](#), or [trackback](#) from your own site.

Leave a comment