

polski
alarm
smogowy

SMOG ALERT? HAVEN'T HEARD OF IT...

POLISH IRON LUNGS

What level of air pollution must be reached in Poland in order for a smog alert to be announced? Four times higher than in Paris and three times higher than in Hungary. Among all EU states, Poland has the most liberal rules for smog alert levels (concentration of particulate matter) and informing the general public about the scale of the problem. At the same time, the quality of air in our country is the worst in the whole European Union. **We pay a high price for that. Are Poles' lungs stronger than that of the French or Hungarians?**

POLES PEOPLE WITH LUNGS MADE OF IRON

Air pollution kills 43,000 people in Poland every year. That corresponds to every ninth death in the country. In Paris, a smog alert is announced when particulate matter – PM₁₀ – levels reach 80 µg/m³. In Kraków, Katowice or Warsaw, authorities responsible for air quality express no concern during such pollution levels. It is no wonder considering the fact that the currently applicable smog alert threshold in Poland is almost four times higher, i.e. 300 µg/m³.

Smog alert thresholds in Poland:

2012 – 200 µg/m³
2015 – 300 µg/m³
2016 – ?

Only three years ago the alert threshold in Poland was 200 µg/m³. The regulation passed in 2012 increased the alert values for particulate matter to 300 µg/m³. By relaxing the criteria for informing the general public about poor air quality, the Polish law restricted protection of citizens against high pollution levels, thereby ignoring their negative impact on our health.

How was the smog alert value of 300 µg/m³ introduced in Poland?

Polish law was changed in 2012 with the Regulation of the Minister of Environment dated 24 August 2012 on admissible levels of some substances in the air. Pursuant to the earlier Regulation on admissible levels of some substances in the air, dated 3 March 2008, the alert threshold for PM₁₀ was 200 µg/m³

Since the EU law imposes no uniform requirements regarding information and alert thresholds for the concentration of PM₁₀¹, each Member State can

adopt its own thresholds or choose not to adopt them at all. A large number of European countries, in order to effectively protect their citizens' health, have introduced such limit values (see Infographic 1 and Annex). **Although Poland is among those countries, the limits applicable here are in most cases twice and sometimes even four times higher than in other countries.** What makes it even more worrying is the fact that, given the fact that Poland has the worst air quality in the whole EU, its inhabitants are much more vulnerable to the adverse effects of air pollution than other Europeans. Why are Poles the least informed then?

WHY DO WE NEED INFORMATION AND ALERT THRESHOLDS?

Determining appropriate information and alert thresholds is very important for the protection of people's health at times when concentration of air pollutants is elevated. Once the information threshold is reached, information about the increased concentration of air pollutants should be disseminated among as many residents of the affected area as possible. Elderly people, children and pregnant women should avoid spending too much time outside, since members of these three population groups are particularly vulnerable to polluted air exposure. Appropriate guidelines should be sent to kindergartens, schools and hospitals. Media should become involved in disseminating the information on air pollution. These kind of actions contribute to raising public awareness of the smog problem as well, which is a key factor in planning and implementing air protection measures.

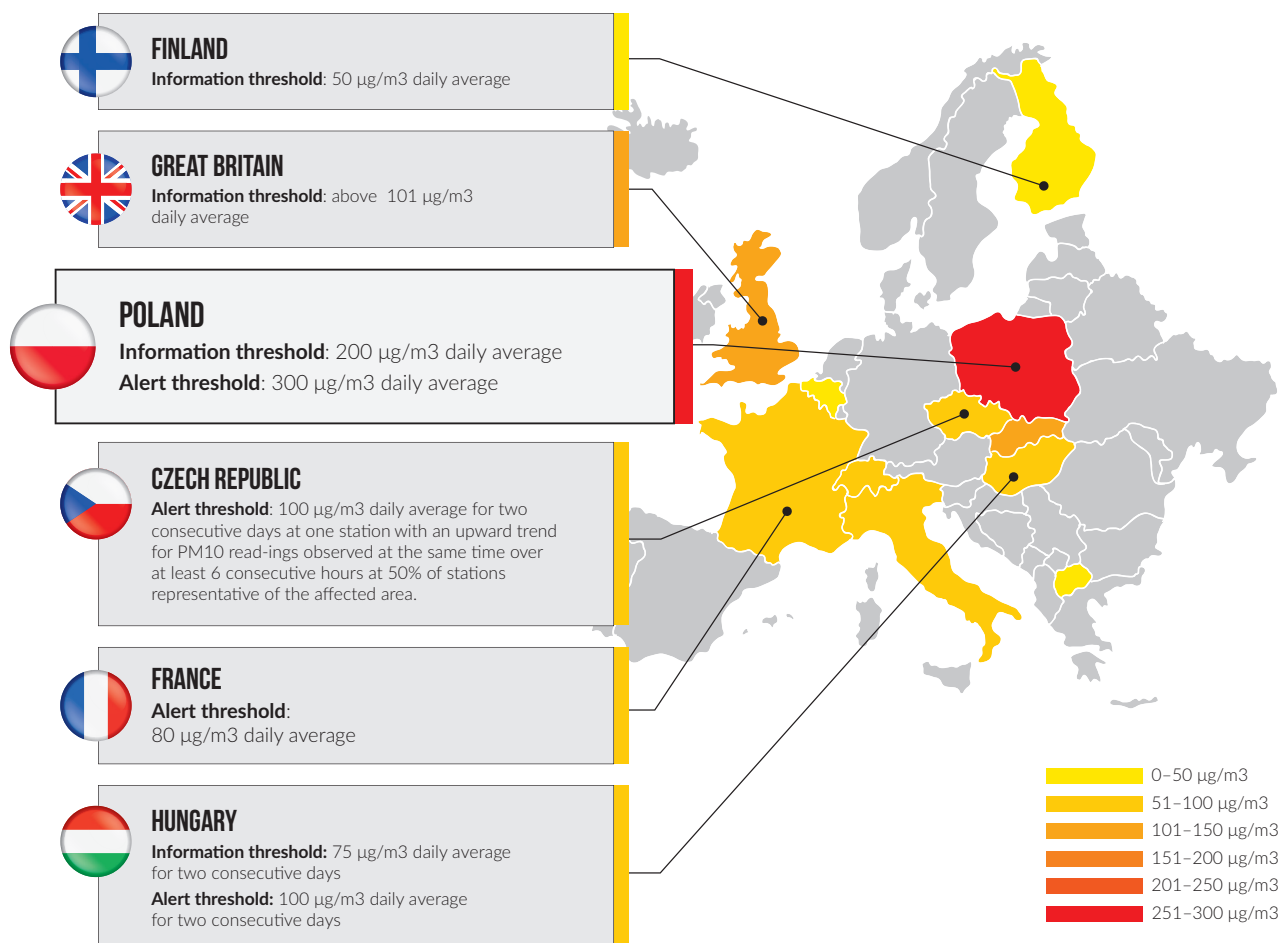
When the alert threshold is exceeded, immediate steps must be taken by local and regional authorities to reduce air pollution in the affected area, e.g. introducing free public transport, conducting extensive inspections of home furnaces, limiting traffic in city centres, conducting extensive inspections at industrial plants, etc.

¹ Uniform information and alert thresholds exist only for sulphur dioxide, nitrogen dioxide and ozone.

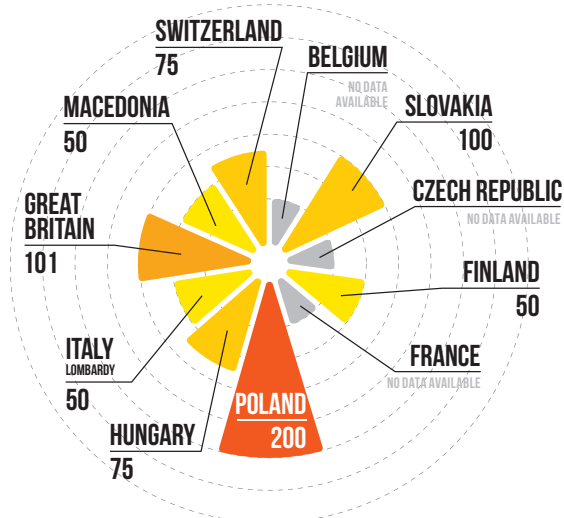
DO POLES HAVE DIFFERENT KIND OF LUNGS?

INFORMATION AND ALERT THRESHOLDS FOR PM10 IN SELECTED COUNTRIES

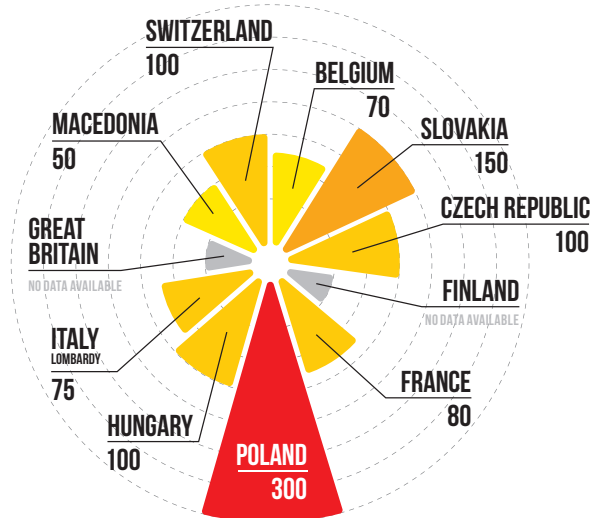
Directive 2008/50/EC, despite the well-documented adverse health effects of brief exposure to particulate matter, lays down information and alert thresholds for SO₂, NO₂ and ozone only, which means that EU Member States are not obliged to adopt such thresholds for particulate matter (PM₁₀, PM_{2.5}). The decision as to whether adopt them or not rests with the Member States



INFORMATION THRESHOLDS



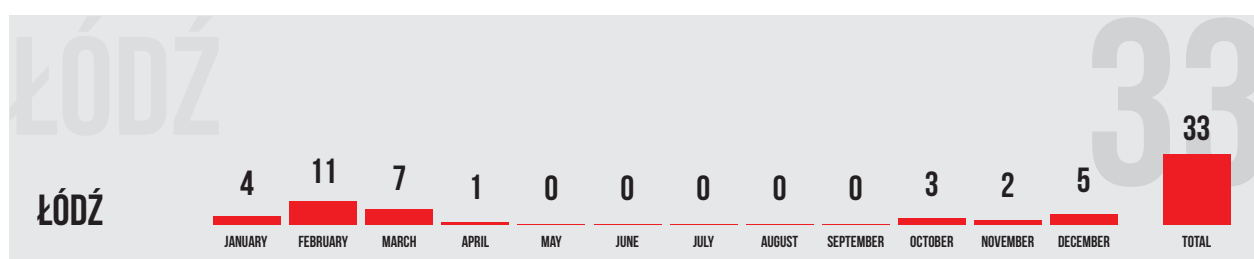
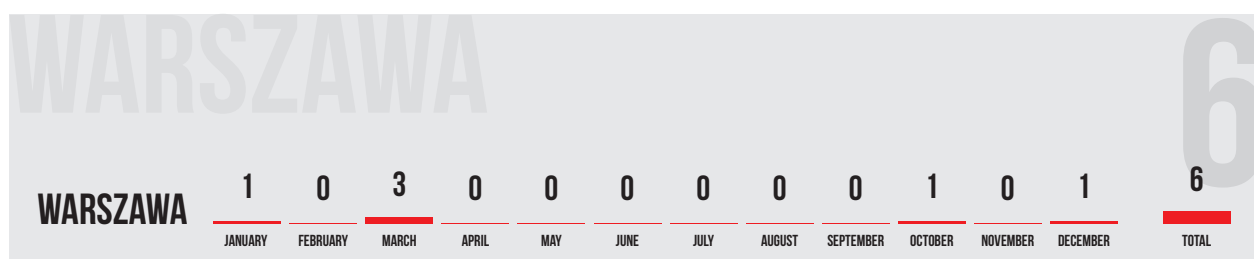
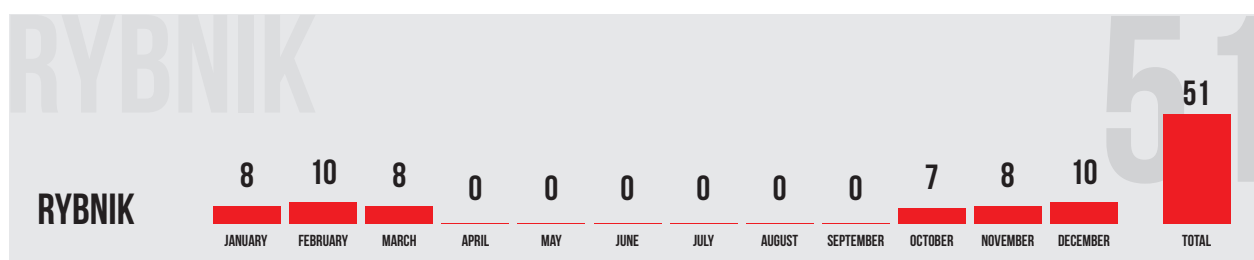
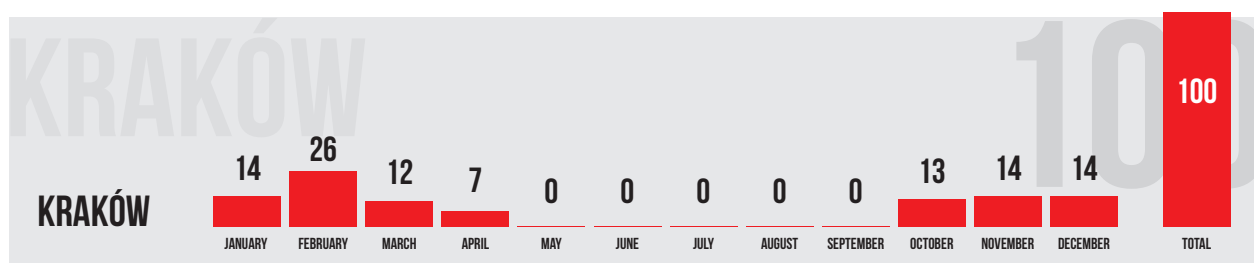
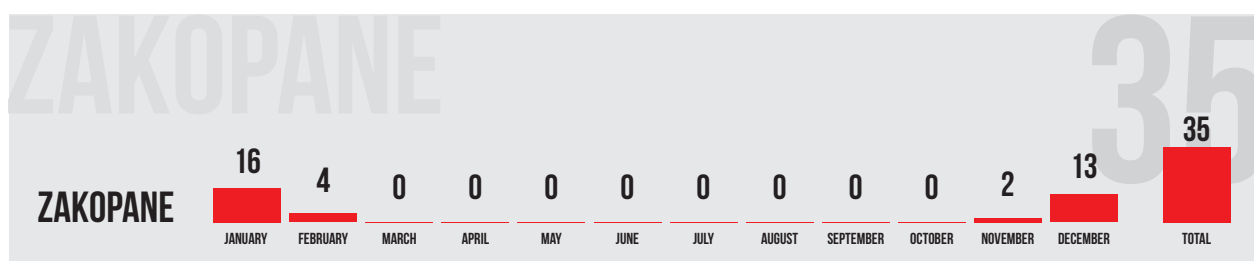
ALERT THRESHOLDS



THE NUMBER OF SMOG ALERTS
THAT WOULD HAVE BEEN DECLARED IN 2014

IF POLAND
HAD THE SAME ALERT THRESHOLD AS PARIS

80
UG/M³



PANIC IN PARIS, PEACE AND QUIET IN WARSAW

On 2 November 2015, Ségolène Royal, the French Minister of Ecology, Sustainable Development and Energy, announced that urban traffic restrictions would be introduced on days when air pollution reached alert thresholds. The number of cars on the roads is to be halved by alternately banning all vehicles with license plates ending with odd numbers and even numbers. The restrictions are expected to have a positive impact on air quality.

In March 2015, when the concentration of air pollutants in Paris exceeded the limit values for three consecutive days, traffic restrictions were introduced in the city. If the same alert thresholds were applied in Poland, in 2014 smog alerts would have been announced on 6 days in Warsaw, on 51 days in Rybnik and on 100 days in Kraków! In most Polish cities such alerts would have been announced on at least several days.

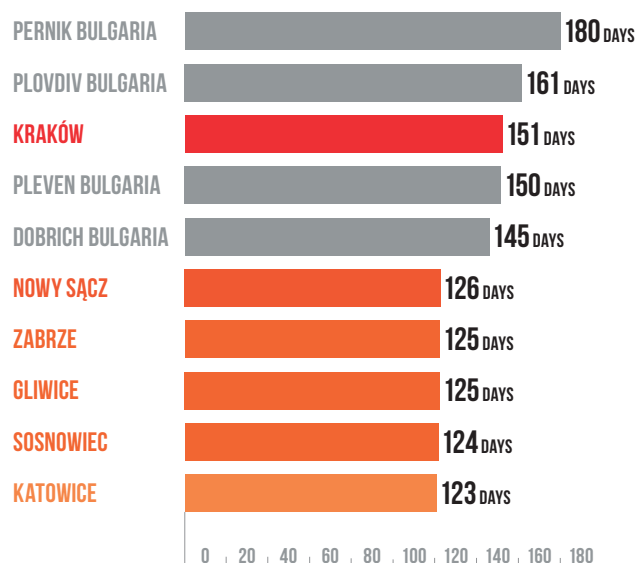
The question then arises whether Poles have different kind of lungs than the French, the British or the Czechs? Why isn't our health protected in the same way? Why don't we have the same access to information about air pollution? Isn't the problem of air pollution and its impact on our health downplayed by the Polish authorities?

THE WHOLE COUNTRY BREATHES DIRTY AIR

The latest report of the Chief Inspectorate of Environmental Protection leaves no doubt: air quality standards have been exceeded in almost all parts of Poland. Limit values for PM_{10} have been exceeded in 91% of the air pollution monitoring zones and for the carcinogenic benzo(a)pyrene in 100% of the zones. We compare unfavourably with other European countries both as regards PM_{10} , $PM_{2.5}$ and benzo(a)pyrene concentrations.

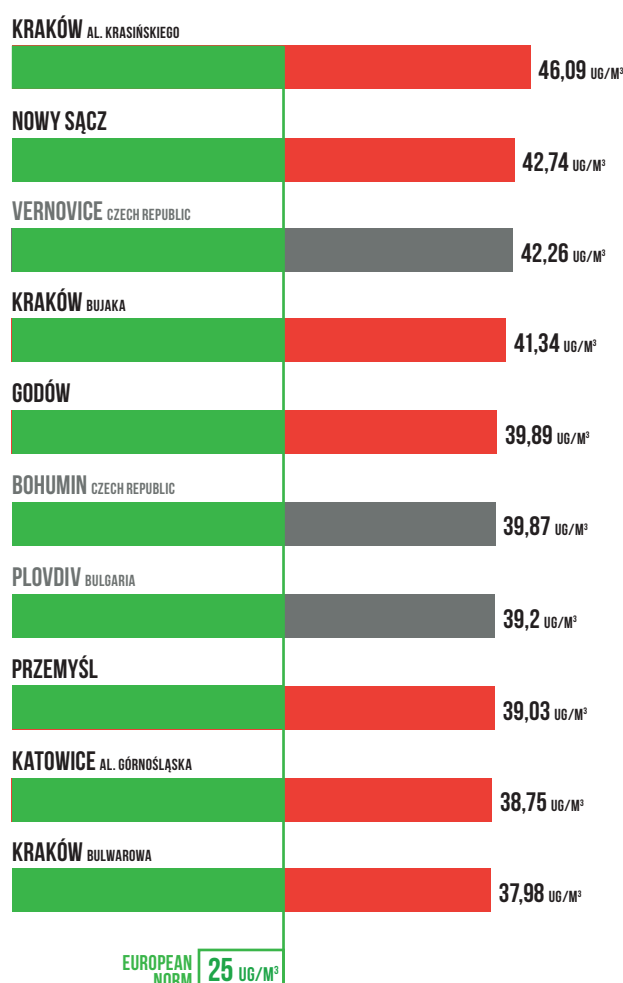
THE NUMBER OF DAYS WITH EXCEEDED DAILY LIMIT VALUES FOR PM_{10} (50 UG/M^3) IN 2011. LAW PERMITS ONLY 35 SUCH DAYS A YEAR.

Source: European Environment Agency



RANKING OF EUROPEAN CITIES WITH HIGHEST CONCENTRATIONS OF $PM_{2.5}$

Annual average concentration of $PM_{2.5}$ in 2012
Source: European Environment Agency

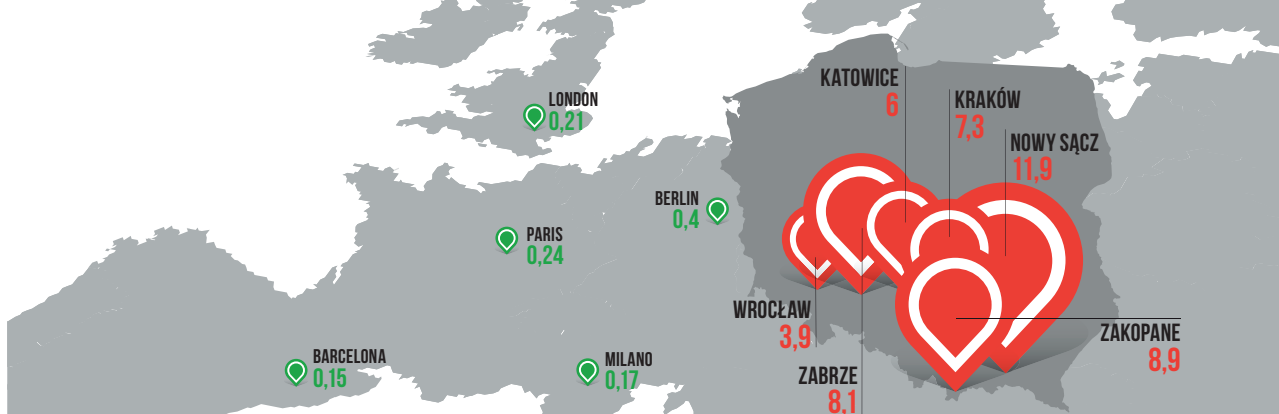


POLAND — THE CHINA OF EUROPE

LARGE AMOUNTS OF CARCINOGENIC BENZO(A)PYRENE
GET INTO OUR LUNGS CAUSING CANCER

[ng/m³]

Source: European Environment Agency, 2013



Air pollution causes approximately 43,000 premature deaths in Poland. The concentrations of particulate matter (PM₁₀ and PM_{2.5}) and carcinogenic polycyclic aromatic hydrocarbons are among the highest ones in the EU. It is therefore extremely important that the general public is adequately informed.

HEALTH EFFECTS OF PARTICULATE POLLUTION

Poland has the highest air pollution levels among all the Member States. It is estimated that around 43,000 people die every year as a result of that fact. Most deaths (approx. 42,500) are attributable to the adverse impact of PM_{2.5}, i.e. the fine fraction of PM₁₀. **Therefore, if we take into consideration the protection of human life and health, PM_{2.5} is the most harmful air pollutant.**

Exposure to air pollution can be of short-term (from a few hours to a few days) or long-term (more than a few months) nature.

Long-term exposure

The health effects of long-term exposure to particulate matter are very well known. Numerous studies have confirmed that it contributes to higher mortality rates in the general population as well as to increased mortality from cardiovascular and respiratory diseases such as the ischaemic heart disease, chronic obstructive pulmonary disease and lung cancer.

Long-term exposure to particulate pollution also leads to premature aging of the nervous system, which consequently accelerates and intensifies the process of cognitive impairment in the elderly. It has also been demonstrated that children living in areas with higher levels of air pollution are likely to have worse school results than their peers from less polluted regions.

Particulate pollution adversely affects the developing foetus. Maternal exposure to particulate matter increases the risk of miscarriage, stillbirth and low birthweight. This problem is particularly serious in Poland where particulate matter contains much larger amounts of highly harmful compounds from the group of polycyclic aromatic hydrocarbons (PAH) and dioxins (PCDD/F).

It has been shown that exposure to polycyclic aromatic hydrocarbons and dioxins during pregnancy contributes to impaired foetal brain development, which results in attention deficit problems and lower IQ.

Short-term exposure

Even brief exposure to particulate matter is very dangerous, especially if its concentration is high. Children, elderly people and those suffering from cardiovascular and respiratory diseases are the most sensitive groups of the general population. Research shows that, in a given age group, people with low socio-economic status are the most vulnerable to the adverse effects of air pollution.

A number of studies have demonstrated that brief exposure to PM_{2.5} significantly increases the risk of death caused by cardiovascular problems as well as the risk of myocardial infarction or sudden cardiac arrest.

Increased blood pressure, asthma exacerbation and increased incidence of respiratory infections, including pneumonia, are among other health effects of brief exposure to particulate matter.

Due to the strong impact of short-term exposure to particulate pollution on human life and health, World Health Organization recommends that the limit values for daily concentrations of PM_{2.5} and PM₁₀ should be 25 µg/m³ and 50 µg/m³ respectively.

In Poland, however, the currently applicable information threshold is reached when PM₁₀ concentration exceeds 200 µg/m³ and the alert threshold when it exceeds 300 µg/m³, which means the limit values are, respectively, four and six times higher compared with the WHO recommendations. From the point of view of health protection, such information or alert thresholds are completely inadequate.

Worse still, the very high Polish information threshold for PM₁₀ (200 µg/m³) means that when it is exceeded, the daily concentrations of PM_{2.5} reach 120–160 µg/m³, so they are 6–8 times higher than the WHO recommendations². As for the PM₁₀ alert threshold (300 µg/m³), the concentrations of PM_{2.5} range between 120–240 µg/m³, which means they are extremely high.

² In Poland, PM_{2.5} constitutes approx. 70% of PM₁₀

ANNEX INFORMATION THRESHOLDS (IT) AND ALERT THRESHOLDS (AT) FOR PM₁₀ IN SELECTED EU COUNTRIES

POLAND

IT: 200 µg/m³ daily average

AT: 300 µg/m³ daily average

Source: Regulation of the Minister of Environment dated 24 August 2012 on admissible levels of some substances in the air

BELGIUM

AT: 70 µg/m³ (average in the region)
forecasted for two consecutive days

Source: http://www.irceline.be/~celinair/documents/documents/Report_annual_Air_BE_2011.pdf

CZECH REPUBLIC

AT: 100 µg/m³ daily average for two consecutive days at one station with an upward trend for PM₁₀ readings observed at the same time over at least 6 consecutive hours at 50% of stations representative of the affected area.

Source: 201/2012 Sb., o ochraně ovzduší
<https://www.zakonyprolidi.cz/cs/2012-201>

FINLAND

IT: 50 µg/m³ daily average

Source: <http://www.ilmanlaatu.fi/ilmansaasteet/saadokset/kynnysarvot.html>

FRANCE

AT: 80 µg/m³ daily average

Source: <http://www.airparif.asso.fr/en/reglementation/normes-francaises>

SLOVAKIA

IT: 100 µg/m³ daily average

AT: 150 µg/m³ daily average

Source: Zbierka zákonov SR Predpis č. 442/2013 Z. Z

HUNGARY

IT: 75 µg/m³ daily average on two consecutive days

AT: 100 µg/m³ daily average on two consecutive days

Source: <http://budapest.hu/Lapok/Sz-mog---tov%C3%A1bbra-is-indokolt-a-riaszt%C3%A1si-fokozat-fenntart%C3%A1sa.aspx>

ITALY (LOMBARDY)

IT: concentrations ranging between 50, a 75 µg/m³ on 7 consecutive days

AT: concentrations exceeding 75 µg/m³ on 7 consecutive days

Source: http://www.cittametropolitana.mi.it/export/export_14032014/n_obiettivo_aia_2001_dgr_6501.pdf

GREAT BRITAIN

101 µg/m³ daily average

The level considered by the Department for Environment, Food and Rural Affairs to be "very high".

In Great Britain, the "very high" pollution level is not referred to as an alert threshold.

Particular matter concentrations are described as: low/high.

Source: <http://uk-air.defra.gov.uk/air-pollution/daqi?view=more-info&pollutant=pm10>

MACEDONIA

IT: concentrations exceeding 50 µg/m³ on 5 consecutive days

AT: concentrations exceeding 50 µg/m³ on 10 consecutive days

Source: <http://airquality.moepp.gov.mk/?lang=en>

SWITZERLAND

IT: concentrations exceeding 75 µg/m³ for 2 consecutive days with no improvement expected according to the weather forecast for the following day

AT: concentrations exceeding 100 µg/m³ for 2 consecutive days with no improvement expected according to the weather forecast for the following day

Source: http://www.svajcalevegoert.hu/en/News/100/What_you_should_know_about_smog/

PARTICULATE MATTER

is composed of a mixture of organic and inorganic particles suspended in air. Particulate matter may contain such toxic substances as: polycyclic aromatic hydrocarbons (e.g. benzo(a)pyrene), heavy metals, dioxins and furans.

PM 10

are the particles up to 10 micrometres in diameter (approx. one-fifth the width of a human hair) that can pass through the airway and travel into the lungs.

PM2.5

much more dangerous than PM10, very fine particles up to 2.5 micrometres in diameter. Due to their size they can pass through the airway and penetrate deep into the lungs and even the blood stream.

Project implemented as part of the Citizens for Democracy programme financed under European Economic Area Financial Mechanism (EEA Funds)



Published by:



Polish Smog Alert
polskialarmsmogowy@gmail.com
www.polskialarmsmogowy.pl

Kraków, November 2015

Polish Smog Alert is an initiative bringing together residents of Poland who are concerned about the quality of air in our country. This nationwide initiative involves a number of local movements: Kraków Smog Alert, Podhale Smog Alert, Rabka Smog Alert, Kalwaria Smog Alert, Zabrze Smog Alert, Nowy Sącz Smog Alert, Rybnik Smog Alert, Katowice Smog Alert, Lower Silesia Smog Alert and Civil Initiatives Development Centre CRIS. We work actively to improve air quality in Poland and to make it compliant with the Polish and European regulations. Most of all, we want to breathe the air that is safe for our life and health.