

# Air Pollution and Health in Bulgaria

## Facts, Figures and Recommendations



Updated October 2018

Air pollution is damaging the health of citizens in Europe and worldwide. A recent Lancet review showed that it is [one of the top ten risk factors](#) for health globally. In the EU [400,000 people die](#) prematurely because of poor air quality. The Organisation for Economic Cooperation and Development (OECD) predicts that [in 2050 outdoor air pollution will be the top](#) cause of environmentally related deaths worldwide.

### Health impacts of air pollution in Bulgaria

Bulgaria has the highest rate of premature deaths due to air pollution in the EU, [217 deaths](#) per 100,000 people are attributed to household and ambient air pollution according to World Health Organization (WHO). That is more than **15,000 early deaths per year**. In addition, the WHO estimates that air pollution eats up the **equivalent of 29.5% of the country's GDP** through reduced productivity and costs of treating the diseases caused.

### WHY IS AIR POLLUTION A CONCERN FOR HEALTH?

Exposure to outdoor air pollution is associated with a broad spectrum of [acute and chronic health effects](#) ranging from irritant effects to early death. While the impacts on respiratory and cardiovascular disease are well documented, new science also shows air pollution has damaging effects on [children's health and](#) even unborn babies. Sensitive and vulnerable groups such as pregnant women, children, the elderly and those already suffering from respiratory and other serious illnesses or from low income groups are particularly affected.

### HOW BAD IS AIR POLLUTION IN BULGARIA?

Air quality in Bulgaria is of great concern. Measurements show that citizens all over the country breathe in air that is considered harmful to health. For example, concentrations of PM2.5 and PM10 are much higher than the limits set by EU and WHO to protect health.

**According to the WHO, citizens all over the country breathe in air that is very harmful to health: 97.2% of Bulgarians are exposed to harmful levels of particulate matter PM10 throughout the year.**

Bulgaria had the highest PM2.5 concentrations of all EU-28 member states in urban areas over a [three-year average](#). In addition, PM10 levels in Bulgaria in 2015

were 68.7 µg/m<sup>3</sup>. That is far above the EU legal limit value of 40 µg/m<sup>3</sup>.

Bulgaria is in almost constant breach of EU air quality laws. So much so that the European Commission has taken Bulgaria to court. In 2017, the [EU Court of Justice ordered Bulgaria to take action to improve its air](#). The Court ruling states that Bulgaria not only failed to meet the binding EU's air quality standards, but also remained inactive in improving air quality. Now, Bulgaria faces severe financial penalties should it not improve the country's air quality.

### HOW DOES ENERGY FROM COAL BURNING CONTRIBUTE TO AIR POLLUTION IN BULGARIA?

Bulgarian coal power plants release substantial amounts of particulate matter, sulphur dioxide, and nitrogen oxides, with the latter contributing indirectly to the formation of ozone.

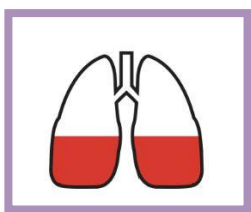
In addition, in 2016, Bulgaria's ten coal plants (of 5 gigawatts) emitted 60,000 tonnes of sulphur oxides into the air, 25,000 tonnes of nitrogen oxides and 1,237 tonnes of small particles. Those plants are among the most polluting in the EU-28.

When small particles are inhaled, they cause harm to our lungs and heart. They can cause strokes in our brain and

lead to premature death. These particles also negatively affect our immune system which reduces our ability to fend off diseases.

Special concern for children's health arise from the large amounts of mercury emissions from coal power plants. Mercury is known to cause damage to children's brain and nervous system, leading to IQ loss, learning

*More than 1,000 premature deaths and numerous health impacts from Bulgarian coal plants per year*



Hazardous fumes emitted from coal plants in Bulgaria in 2015 **caused 1,150 premature deaths per year**. More than **560** people suffer from chronic **bronchitis** cases due to emissions from 10 Bulgarian plants each year. **790 people are hospitalised** due to respiratory or cardiovascular symptoms. And **28,000 asthma attacks in children** are caused.



Costs of ill-health by pollution from Bulgarian coal power plants alone are estimated to be up to **€3.2 billion per year**.

disabilities, sensory deficits, and delays in healthy development.

## **IN THE SPOTLIGHT: THE BOBOV DOL POWER PLANT**

Close to Bulgaria's capital Sofia, the Bobov Dol coal power plant plays a substantial role in worsening already poor air quality.

It is a mid-size coal power plant with 630 megawatt capacity. The pollution emitted from this plant causes significant health damage. In 2016 (last reported year), 1,484 tons of SO<sub>2</sub>, 1,323 tons of NO<sub>x</sub> and 102 tons of dust were released into the air. The local community has been living for years under a thick layer of dust covering their playgrounds, windows, cars.

*Limiting pollution – public health intervention that pays off!*

**If new emissions limits** for coal power plants were implemented swiftly and fully, the number of premature deaths caused by coal in Bulgaria could be **reduced from 1150 premature deaths to 250 deaths per year**. This means a reduction by 900 early deaths prevented by improving air quality every year. There is room for even greater reduction if best available technologies were used to better filter the pollution coal plants are producing.

Currently (end of 2018) national authorities are deciding on 'derogations' for some of Bulgarian coal plants. Derogations are exceptions to the law on strict emission limits and allow operators to pollute more.

**No derogations should be granted and coal phase-out plans should be outlined as quickly as possible, for public health and the health of future generations.**

## WHAT CAN MEDICAL EXPERTS DO?

Doctors around globe are coming together to raise the importance of safe, clean air for their patients and the climate. Through the [‘Unmask My City’ initiative](#), health professionals are calling for tangible, city level improvements of air quality in urban areas.

A unique [coalition of 9 organisations of Bulgarian doctors, health experts and patients](#) has joined the global call for clean air. It is absolutely vital that health professionals engage in policy processes with decision-makers to show how pollution can successfully be reduced.

The health community is also speaking out on the damaging role of coal combustion and the health consequences of our reliance on fossil fuels to heat and power our homes, run our cars etc.

The time is right to advocate on the health damage from coal. Based on the established scientific evidence about the health risks from coal combustion, doctors and health organisations can add a long neglected health perspective to the debate around Bulgaria’s future energy supply.

## STEPS TO TAKE ACTION

### Physicians

#### Consider environmental factors when diagnosing patient illness

Assess and include environmental information into the medical history of patients. Such information can be invaluable in discovering underlying causes of disease and contributing to the body of knowledge on environmental risks.

#### Report medical case studies from your community

Help with building up the evidence by reporting the case studies. Absence of evidence is not evidence of absence. Understand what absence of evidence means; if it is not available [information or lack of proving statistical significance](#).

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The Health and Environment Alliance (HEAL) is the leading not-for-profit organisation addressing how the environment affects human health in the European Union (EU) and beyond. HEAL works to shape laws and policies that promote planetary and human health and protect those most affected by pollution, and raise awareness on the benefits of environmental action for health.

HEAL’s over 70 member organisations include international, European, national and local groups of health professionals, not-for-profit health insurers, patients, citizens, women, youth, and environmental experts representing over 200 million people across the 53 countries of the WHO European Region.

As an alliance, HEAL brings independent and expert evidence from the health community to EU and global decision-making processes to inspire disease prevention and to promote a toxic-free, low-carbon, fair and healthy future.

HEAL’s EU Transparency Register Number: 00723343929-96

## Check the air quality situation

Check the air quality situation in the area where your patient lives with the data from the local monitoring station for SO<sub>2</sub>, NO<sub>2</sub> and PM. There are a number of ways to check for air quality real-time. One of most reliable data source is via the [European Environment Agency Air Quality Index](#). You can also [use indicative air pollution data from citizens network](#). This data will be able to give you more detailed air pollution levels for a particular street or neighbourhood in real-time.

### Public health professionals

#### Inform the public or flag up a health alert

Highlight to local authorities, the media, and the public if thresholds for SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>10</sub> are exceeded. Coal power plants in the region might contribute to high concentrations. Obtain weather data (e.g. wind directions) for the same period in order to determine potential point sources. Depending on the air quality situation, you may advise sensitive groups to stay indoors.

#### Engage in policy developments

Become involved in the debates on higher air quality standards at national level. Highlight to national decision-makers that the health impacts and external costs of coal have to be taken into account in energy policy decisions. From a health perspective building new coal power plants is detrimental to efforts of tackling chronic disease and creates unnecessary costs. Existing regulations need to be enforced and updated, stronger regulation is needed.

#### Educate the public on health risks due to air pollution

Raise awareness on the health risks from coal power in local consultation processes and help to ensure the enforcement of better pollution control for existing coal in order to protect public health. Also, use the opportunity to organise events to promote the importance of clean air.

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