

When it comes to ambient air quality, the ancient country of North Macedonia is not exactly in a good place. It's estimated that more than 2,000 premature deaths—most of them concentrated in the capital city of Skopje—are caused directly by constant exposure to a noxious mix of air pollution generated by mobile and stationary sources. These include household fireplaces, wood stoves, aging and inefficient vehicles, relentless emissions from coal-fired power plants, and poorly regulated industries. If anything, these issues underscore the importance of air filters in areas with poor air quality.

It's no surprise why Skopje has been recognized as one of the most polluted cities in the world. But its problems are hardly unique; in fact, the same issues happening in North Macedonia can also be found in the United States and other developed countries struggling with air pollution.

Explaining Skopje's Outdoor and Indoor Air Quality Crisis

Skopje experiences severe outdoor and indoor air quality episodes during the winter, when the winds slow down, preventing air pollution from dispersing, and a layer of warm air high in the atmosphere presses down cool air laced with pollution into the valley. When this happens, a haze smelling of ash and chemicals hangs over the city—the classic smog effect caused by an atmospheric inversion.

And while it's easy to assume that the safest thing to do during these smog events is to stay indoors, that's not necessarily true.

"Outdoor air pollution infiltrates into buildings," explains Camfil USA's Charlie Seyffer, Manager of Marketing & Technical Materials for commercial air filters and 37-year ASHRAE member and active committee participant. "Without appropriate clean air ventilation or air filtration, it accumulates and can even react with other indoor air pollutants."

It should also be pointed out that air pollution also comes from indoor sources, so completely sealing off a building will only cause these indoor air pollutants to build up and reach levels that are even more toxic than the air outside.

Limited Access to Air Filtration Systems

For now, North Macedonians have had little choice but to stay indoors on days when air pollution is particularly bad and use facemasks whenever they had to go outside. Worse, air filtration systems in households are uncommon due to their cost. And as far as collective measures are concerned, the government has so far had little success in this landlocked and

mountainous region, so much so that the previous government was ousted in part due to environmental criticisms.

However, succeeding administrations have promised environmental reform, and some plans are already being implemented. But the air pollution crisis continues and, for the most part, seems to be worsening. Still, many North Macedonians admit that one administration isn't solely to blame for the problem, admitting that the air quality crisis goes back many decades and governments ago.

How Can Home Air Purifiers Help?

As Macedonia emerged from the breakup of Yugoslavia in the early 1990s, it found itself with an economy mostly dominated by mining and construction, whose respective infrastructure was largely unregulated and operated without environmental permits for decades. The Elem coal-fired power plant, for example, which supplies 70 percent of North Macedonia's electricity, continues to pump out tons of toxic pollutants, creating air quality conditions that are strikingly similar to those in another city struggling with poor air quality which is the city of New Delhi. And so, tens of thousands of North Macedonians have no choice but to stay indoors under the refuge of home air purifier.

High Efficiency Filtration Systems Could Do a Lot of Good in the Region

High efficiency filtration systems could be a welcome source of relief in the middle of this crisis, as these solutions are capable of capturing fine particulate matter—the primary type of airborne pollutant associated with power plant and other types of industrial emissions. *Fine* particulate matter, known as PM2.5 or particulates 2.5 microns in diameter and below, is of particular concern to scientists, as these particles are light enough to stay suspended in the air for hours and small enough to enter deep into the lungs, causing a host of health problems as a result.

When attached to an heating, ventilation and cooling (HVAC) system, a high efficiency filter basically acts like a sieve, trapping particulate matter down into the sub-micron range.

Source: news.topwirenews.com