

Bishkek energy efficiency

Bishkek, Kyrgyz Republic, 31 October 2022 - Improving how homes are heated is the most effective way to prevent deaths from poor air quality in the Kyrgyz capital, finds the first ever study of key air pollution sources and impacts for the city released today.

The report, *Air Quality in Bishkek: An assessment of emission sources and roadmap for supporting air quality management*, was carried out by the Finnish Meteorological Institute for the UN Development Programme (UNDP) and the UN Environment Programme (UNEP). The types and timing of emissions detected by the study indicate that sulphur-rich coal used to heat homes is by far the main source of air pollution in the Kyrgyz capital, the assessment reveals. A roadmap of policy options is proposed for the housing, transport, power generation and waste sectors over the next three years.

Bishkek's powerplant may contribute less than 1% of ground-level concentrations of harmful particles known as PM2.5 and PM10, partly because its tall chimneys disperse pollution away from the city, the assessment finds. Meanwhile, 70% of homes in the Kyrgyz Republic are heated by coal, causing the most dangerous levels of fine particulate matter -- PM2.5. These microscopic particles of air pollution can penetrate deep into the lungs, cross the lung barrier and enter the blood system, causing heart and respiratory diseases and lung cancer, for example.

Louise Chamberlain, UNDP Resident Representative at the presentation of the report said: "Bishkek needs system-wide action with innovative energy solutions to tackle the pollution challenge and make the switch to clean and affordable heating and transport technologies. The most vulnerable and marginalised people play an important role in changing consumption patterns and we have this great opportunity to include them in building a more fair and sustainable economy."

"This report equips decision-makers with the strongest scientific basis to date for taking impactful action to tackle air pollution in Bishkek," said Aidai Kurmanova, Head of UNEP's Central Asia Office. "The solutions at hand will save lives, help tackle the climate crisis and earn savings in the healthcare sector".

The Kyrgyz capital is regularly ranked among the top five cities with the most polluted air in the world during the wintertime heating period. Annual mean PM2.5 levels in the city by far exceed all national and international guidelines, the study finds. During 2010-2019, approximately 4100-5000 people died prematurely each year due to air pollution in the Kyrgyz Republic, representing 12-13% of annual deaths. Poor mixing conditions of the air exacerbate the problem in Bishkek.

A prescription to avoid deaths

Emissions of all key pollutants are expected to grow significantly towards 2040 under a "business as usual"

scenario. For example, by that date, PM2.5 emissions would be estimated to increase by 60%, driven primarily by increases in emissions caused by how homes are heated.

To avert this, the assessment lays out a roadmap of policy options covering key emission sources. For the residential sector, affordable clean alternatives to coal such as heat pumps could be promoted and efficiency measures be stepped up, the report's roadmap recommends. Fuel standards could be tightened in the transport sector, while renewable energy could meanwhile play a bigger role in power generation. Reducing the use of fossil fuels would not only improve air quality but also contribute to climate action and lead to savings in healthcare costs, the report underlines.

Air quality monitoring must be improved to provide decision-makers with better data -- including on how effective policy actions are, the assessment finds. Dense low-cost air quality sensor networks can also be used to assess air quality hotspots. Meanwhile, modernizing air quality legislation is essential, and can help to better understand the impact on human health, the report stresses.

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