Dispersion of Naturally Occurring Asbestos Fibers During Wind Energy Park Construction in the Shala Region, Kosovo

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Abstract

This study examines the occurrence of naturally occurring asbestos (NOA) fibres in airborne dust during the construction of the Bajgora Wind Energy Park in the Shala region of Mitrovica, Republic of Kosovo. Airborne particulate samples collected near excavation and earth-moving activities were analysed using scanning electron microscopy with energy-dispersive X-ray spectroscopy (SEM/EDX). The results confirmed the presence of chrysotile fibres and amphiboles of the serpentine mineral group, both characteristic of asbestos-bearing minerals. SEM/EDX provided detailed morphological and chemical characterization, enabling accurate identification of asbestos fibres in the samples.
The detection of these fibres in the air reveals significant health risks for workers and surrounding communities, as inhalation of asbestos is strongly associated with severe respiratory diseases, including asbestosis and mesothelioma. These findings emphasize the urgent need for systematic monitoring and preventive measures to reduce exposure during construction and maintenance activities. Furthermore, the study highlights the importance of establishing long-term air quality monitoring systems in the Shala region to protect public health and the environment from asbestos contamination.

Keywords: Naturally Occurring Asbestos (NOA), Chrysotile, Amphiboles, SEM/EDX analysis, Wind Energy Park

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