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ENVIRONMENTAL IMPACT ASSESSMENT OF NO_2 EMISSION AND THEIR RELATION TO METEOROLOGICAL CONDITIONS IN KOMÁROM, HUNGARY

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World's population live in a poisonous environment with a lot of toxic pollutants. Atmospheric pollution has direct, indirect or cumulative effects on human health, and a total load of contaminants may exceed the ability of the body to adapt. One of the best way to face environmental problems is an application of Environmental Impact Assessment (EIA) which is an essential process of sustainable development. This study was highlighted in air quality assessment of air pollution of bypass road No. 131 in Komárom, Hungary. The differences of air quality between the two years 2010 and 2015 before and after operating the bypass road were investigated during the application of EIA. For this purpose, the IMMI software was used which is a widespread noise and air pollution modelling software provided by the German Wölfel GmbH. For simulations, traffic network graphic elements, traffic data (numbers of cars and heavy trucks), emission factors for different pollutants and meteorological data (wind speed, wind direction, and stability categories) were used. Using a Gaussian dispersion model in IMMI software, the average concentration fields of NO_2 were simulated for the whole area and for specific receptor points in case of different wind speed intervals, wind direction, and different stability categories. According to the low traffic motion in the bypass road No. 131, the results of the dispersion model showed only small differences in air quality between 2010 and 2015, but indicate the impacts of the changes in traffic and environmental developments on air quality.

Keywords: *environmental impact assessment, air pollution, Gaussian dispersion model IMMI software, Komárom*

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