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## Preserving Environment by Clean Energy Public Transport: The Case of Skopje, Macedonia

**Abstract** *Being consecutively ranked as one of the most polluted cities in the world, Skopje, the capital of Macedonia, serves as a suitable ground for introducing new, environmentally friendly public transport. The paper argues the justification of utilization of a monorail as technologically and operationally sound long-term sustainable transportation system. Replacing the current city transport based on diesel buses, with new electric driven monorails, enables sustainability, emissions reduction, and clean energy utilization. The research findings indicate that with only two suitably designed monorail lines, almost 70 % of all city public transportation needs may be covered. Such fast, reliable and modern concept will contribute to air pollution reduction in a large manner. Despite the common claim that monorail costs are unpredictable and extremely high, the study evidence some stylized facts to be reasonably consistent, yet, with a necessity for more in-depth feasibility analysis. The practical significance of the paper is that suggests valuable recommendations for projecting a monorail, as probably the only permanent solution to the slow and inefficient public transport of Skopje, and improving environmental footprint in the same time.*

**Keywords:** *Clean energy; Monorail transportation system; Environment impacts; Skopje*

### Introduction

Constant increase in urban air pollution particularly from road transport and traffic congestion is becoming a growing concern and a very delicate issue for large cities. Skopje, the capital of Macedonia, is facing with rapid use of motorized transport, which is expected to continue to increase in the coming years, potentially diminishing air quality. With more than 650,000 inhabitants and a daily inflow of almost 20,000 people, Skopje is very busy economic and administrative centre in the region, which is rapidly facing a poor air quality. In the winter of 2018, Skopje was ranked for several times at the unfavourable first place on the list of the most