

# <sup>1</sup> CNG BUSES FOR CLEAN AND ECONOMICAL CITY TRANSPORT

*Saša Milojević, Technical Manager, Vulovic transport, Kragujevac, Serbia*  
*Radivoje Pešić, Faculty of Mechanical Engineering in Kragujevac, Serbia*

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## **Abstract**

Global warming, increasing air pollution and diminishing oil reserves have made the need for alternative fuel use imperative around the world. Use of compressed natural gas as an alternative fuel is an effective, currently available way to help solve pressing environmental and fuel – resource problems. Because of its lower carbon content (H/C ratio close to 4), natural gas causes about 25% less CO<sub>2</sub> – emissions than diesel fuel for same amount of energy and thus makes an important contribution to the reduction of CO<sub>2</sub> and pollutants.

This paper presents the technical characteristics of urban buses powered on compressed natural gas, as well as environmental and economic benefits of the introduction of these vehicles in local public transport, primarily in conditions of exploitation in the larger towns. In first time, according to our project “KRAGUJ”, diesel buses in urban traffic in the city of Kragujevac, will very quickly be replaced with new CNG powered buses. The future is dedicated to biogas buses, in an effort to reduce emissions of CO<sub>2</sub>, particles and noise.

**Key words:** CNG buses, clean city transport, greenhouse gas emissions, ECE R 110.

## **AUTOBUSI SA POGONOM NA KOMPRIMOVANI PRIRODNI GAS ZA ČISTIJI I EKONOMIČNIJI GRADSKI PREVOZ**

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**Rezime:** Globalno zagrevanje, povećano zagađenje vazduha i smanjenje naftnih rezervi, daju sve veći imperativ primeni alternativnih goriva u svetu. Primena komprimovanog prirodnog gasa kao alternativnog goriva predstavlja efektivan i trenutno dostupan način za rešavanje problema zaštite okoline i resursa goriva. Zbog niskog sadržaja ugljenika (odnos H/C=4), prirodni gas prouzrokuje oko 25% nižu emisiju CO<sub>2</sub> u odnosu na dizel gorivo za istu količinu energije i prema tome, značajno doprinosi smanjenju emisije CO<sub>2</sub> i drugih polutanata.

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U ovom radu su prikazane tehničke karakteristike gradskih autobusa sa pogonom na komprimovani prirodni gas, kao i ekološke i ekonomske prednosti uvođenja ovih autobusa u javni gradski prevoz putnika, primarno za uslove eksploatacije u većim gradovima.

Saglasno našim predlozima u okviru projekta „KRAGUJ”, dizel autobusi u javnom gradskom prevozu putnika grada Kragujevca bi trebalo vrlo brzo da budu zamenjeni novim autobusima sa pogonom na komprimovani metan CNG. U budućnosti se ide korak dalje sa primenom biogasa za pogon autobusa, saglasno redukciji emisije CO<sub>2</sub>, čestica i buke.

**Ključne reči:** autobusi, čistiji saobraćaj, emisija gasova staklene bašte, ECE R110.