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## **NATURAL GAS AS A SAFE TECHNOLOGY FOR CLEAN URBAN VEHICLES**

**ABSTRACT:** A motor vehicle fuel can be dangerous if handled improperly. Like liquefied petroleum gas, gasoline and diesel fuel are potentially dangerous fuels, but over time we are learned to use them safely. The same is true with natural gas. It safely generates our electricity, heats our homes and cooks our meals. Natural gas from the gas field to the vehicle's engine, requires very little processing to make it suitable for the use as a fuel. Usually, at a reciprocating compressor's fueling station, the natural gas is compressed and provided to vehicles, where it is stored at 200 bar pressure like Compressed Natural Gas (CNG). In the paper, the solutions for the safe conversion of gasoline powered car and local articulated bus to dedicated Natural Gas Vehicle (NGV) are shown. In addition to safety, the paper demonstrates also ecological benefits, regarding to the use of NGVs in urban transport. In the paper, shortly is presented a look in the natural gas market dynamics and safety regulations.

**KEYWORDS:** Compressed natural gas, safe vehicle, cleaner urban transport.

### **INTRODUCTION**

Natural gas is a fossil fuel of choice for Europe. It is clean, safe, and mainly available fuel with a acceptable price for the region's residential, industrial, and commercial customers [2,5,8].

Today the natural gas consumption shows an increase after the global economic crisis. World natural gas consumption grew by 7.4% in 2010, with above-average growth in all regions, but the Middle East consumption growth was above average in all regions - the most rapid increase since 1984. The US had the world's largest 2010 increase in consumption (in volumetric terms), rising by 5.6% to a new record high. Russia and China also registered large increases – the largest volumetric increases in the country's history in each case. Consumption in other Asian countries also grew rapidly in 2010 (+10.7%), led by a 21.5% increase in India. EU27 countries also show an increase of 7.2% in 2010 in total natural gas consumption, compared to 2009 [11,14].

Natural gas production in North Sea and other EU countries will continue providing significant amounts of gas for Europe's needs, but the relative share of those sources will decrease. According to the latest estimates by the International Energy Agency, natural gas consumptions in the EU will be increased from 536 billion cubic meters (bcm) in 2008 to 636 bcm in 2035 – an increase of approximately 19%. By 2035, EU domestic gas production will have dropped up to about 50%. In that situations, the Russian Federation has the choice to fill a significant proportion of the European import gap of around 113 to 155 bcm by the year 2030 [11].

The South Stream Offshore Gas Pipeline is very important in terms of efficiency and stable supply of the gas market. The project will contribute to European energy security, like in the Republic of Serbia too, and will help the EU member states to meet their Carbon Dioxide (CO<sub>2</sub>) reduction targets.

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