Can Natural Gas Substitution in Transportation Sector Reduce Green House Gases (GHGs) Significantly: An Input-Output Analysis

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Author: Niaz Ahmed Bhutto
Co-Authors: Nisar Ahmed Siddiqui, Selim Cagatay

Over the last three decades, sustainable development has remained core debate for international organizations, governments, NGOs, political figures, academicians, researchers, and common public. Much a do has been done in last few decades like international treaties to address the issue of climate change with special focus on global warming and Kyoto Protocol is the prominent among all treaties. As the Kyoto Protocol runs out in 2012, there is need of a new climate protocol that can keep the countries on the track of sustainable development which was emphasized in the United Nations Climate Change Conference held in Canun, Mexico December 2010. This same issue was discussed one year before in the UNFCCC conference in Copenhagen, Denmark.

Turkey has never left behind in joining the hands with other countries in incorporating the sustainable development in her development plans and planning. Turkey's economy is growing faster; its transportation sector is even growing faster to meet the demand of the country. Transportation sector plays very important role in the growth of the Turkish economy but this sector contributes too much in GHGs emissions than in the growth of the country. This conflict can be resolved partially by substituting natural gas for other fossil fuel types used in transportation sector. The aim of this study is manifold. Firstly to estimate the sole contribution of GHGs emissions from fossil fuel consumption by the year 2012 from transportation sector by using the input-output table. Secondly to find out reduction in GHGs emissions after substituting natural gas by 40 percent in this sector in the year 2012. Thirdly, this study will also estimate the reduction in the import bill of the Turkey as natural gas is the cheapest source of energy among all if net calorific value is considered. Lastly, this study will give recommendation based on findings in lines with the sustainable development.