Environmental Engineering and Management Journal

August 2015, Vol.14, No. 8, 1813-1820 http://omicron.ch.tuiasi.ro/EEMJ/



"Gheorghe Asachi" Technical University of Iasi, Romania



## DEVELOPING URBAN LOW-CARBON TRANSPORT SYSTEM IN DEVELOPED CITIES OF CHINA: THE EXAMPLE OF JINAN

## Qiang Han<sup>1</sup>, Jiang-Hua Zhang<sup>2\*</sup>, Yang Liu<sup>2</sup>, Bao-Jian Qiu<sup>3</sup>

<sup>1</sup>Shandong University of Finance and Economics, School of Management Science and Engineering, Jinan, Shandong 250014, China <sup>2</sup>Shandong University, School of Management, Jinan, Shandong 250100, China <sup>3</sup>University of Jinan, School of Mathematical Sciences, Jinan, Shandong 250022, China

## Abstract

Economy depends heavily on transport. Since the overwhelming motor vehicles burn fossil fuels at present, transport system keeps producing  $CO_2$ , which will speed up the climate change if fossil fuels are consumed excessively. Thus, Jinan, the economic center of China's second developed province, aims to formulate a low-carbon transport system in future. This paper analyzes the causal relationship in transport system and discusses its  $CO_2$  emission situation according to the time. In a short term, during the 12th Five-Year Plan, it is concluded by energy saving potential analysis that 4.92 million tonnes of  $CO_2$  emissions would be reduced. In the long term, Jinan has the same goal to reduce  $CO_2$  emission as the state, so the scenario analysis is applied and four future scenarios are generated according to transport socialization and sustainability. Since it follows the cause and effect diagram, structure adjustment, positive policy, and technology will be helpful to achieve the preferred fourth scenario, based on which, successful measures have been implemented in Jinan.

Key words: causal relationship, low-carbon transport, scenario analysis, transport system

Received: November, 2014; Revised final: July, 2015; Accepted: July, 2015

<sup>\*</sup> Author to whom all correspondence should be addressed: e-mail: zhangjianghua@sdu.edu.cn; Phone: +86 531 88363169